

# The Iron Age

## A Review of the Hardware, Iron and Metal Trades.

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### The Iron Movement at Cincinnati.

The following interesting facts and statistics regarding the iron trade are taken from the advance sheets of Superintendent Maxwell's report to the Cincinnati Chamber of Commerce:

The year to the general iron interests of Cincinnati has been a very satisfactory one. It has been a period of great activity, equal conditions and generally favorable circumstances, and one that was singularly free from speculative influences. It has been a season in which actually legitimate demand came as near regulating prices as has been seen in many years. Specially has it been an encouraging one to this city, whose manufacturers have been actively and profitably employed, and whose relation to the actual production of iron never was so marked in its importance. In the preceding report, reference was made to the closer relations we were enjoying with the great iron region of the South, on account of the completion of the Cincinnati Southern Railroad, the practical extension of the Louisville and Nashville Railroad to Cincinnati, and the completion for through rail business of the Chesapeake and Ohio Railroad. These results, though not actually occurring at the same time, were practically simultaneous, and mark a new era in the iron history of this city. The immediate benefits, to which allusion was made last year, have become the more pronounced in the year just closed, and the prospective advantages these new agencies are to furnish have found clearer revelation. They, too, are to have very important reinforcement by the completion of the road to Knoxville and the building of a direct connection with Nashville, which seems probable in the near future. All these have the larger significance as the mineral riches of the South become better known, for it is well understood that the more that is learned concerning the mines of wealth in the mineral regions pierced by these great lines of railroad, the more valuable they become and the larger importance Cincinnati assumes as the natural point for the distribution and consumption of their products. The total quantity of pig iron manufactured in the United States in the calendar year of 1881 was 4,641,564 net (2000 pounds) tons, in comparison with 4,295,414 tons in the preceding year, and 3,973,875 tons in 1879. Now, of the whole quantity made in 1881 in the country, the aggregate output of the States of Alabama, Georgia, Indiana, Kentucky, Michigan, Missouri, Ohio, Tennessee and West Virginia contributed 1,349,961 tons, in comparison with 1,250,116 tons in 1880, and 876,445 in 1879. It thus appears that the district tributary to this city in the year 1881 showed an increase over the preceding year of 99,845 net tons, or about 8 per cent., and that it produced over 29 per cent. of the entire product of the United States, and this notwithstanding Indiana, Kentucky and West Virginia showed 20,864 tons less made than in 1880. As showing what the South is doing, it may be remarked that of the whole increase in these nine States, Alabama, Tennessee and Georgia furnished 47,507 tons, or very nearly one-half of the whole increase in the district tributary to Cincinnati, the output of the three States having been, in 1881, 222,891 tons, compared with 175,384 tons in 1880.

The business transacted in pig iron at Cincinnati shows an encouraging increase over the previous year, and consequently over any preceding year, inasmuch as the sales of 1880-81 were, to that time, much the largest on record. It having been a year free from speculation of every kind, whatever increase may be apparent is one based on the fairly legitimate business of the city. According to confidential information furnished the superintendent of the Merchants' Exchange, the actual sales of pig iron from first hands, for consumption, during the commercial year ending August 31, 1882, aggregated 386,510 tons, compared with 334,702 tons in 1880-81, 248,519 tons in 1879-80, 212,218 tons in 1878-79, 125,912 in 1877-78, 129,194 in 1876-77, and 137,646 in 1875-76. These figures also embrace iron sold to go directly from the furnaces to the places of consumption, whether the same touched this city or not, which accounts for the difference between this aggregate and the actual movement, which was much less, the total receipts of pig iron in the past year having been 156,340 tons, in comparison with 137,161 tons in 1880-81. The actual shipments aggregated 100,953 tons, in comparison with 97,665 tons in 1880-81.

It will thus be seen that the past year, viewed from any standpoint, is the largest that this city has ever transacted. The figures, which show the successive stages of our progress in this great department of business, are more expressive than anything else that could be presented. They show a business which has grown in a few years from comparatively small proportions to great influence and extent, and one that is making itself felt in the whole realm of the iron business of this country. Nor is there any reason why the increase should not be as large in the future as in the past. Possessing the largest assortment of iron of any market in the country, and the natural point for the distribution of the resources of a region wonderfully rich in iron, there appears every reason to expect continued development, both in the extent and influence of this important branch of

our business. Prices during the year have been free from any considerable fluctuations, and to the manufacturers of and dealers in manufactured iron the year has been

Spain's Iron Ore Trade.—Within recent years the iron-ore trade of Spain has been developed with remarkable rapidity. In four years, as the figures will show, the

in 1882, 3,737,347 tons. The greatest maritime movement in the history of Bilbao was on May 3, 1882, when 62 steamers and 7 sailing vessels cleared from the port, and on

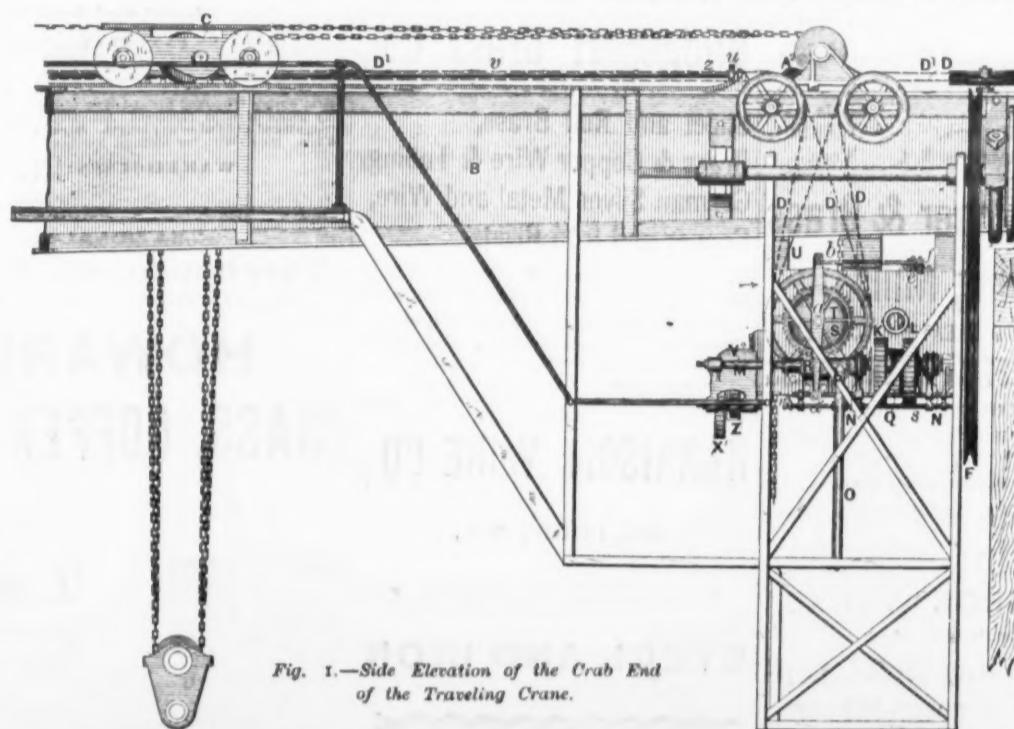


Fig. 1.—Side Elevation of the Crab End of the Traveling Crane.

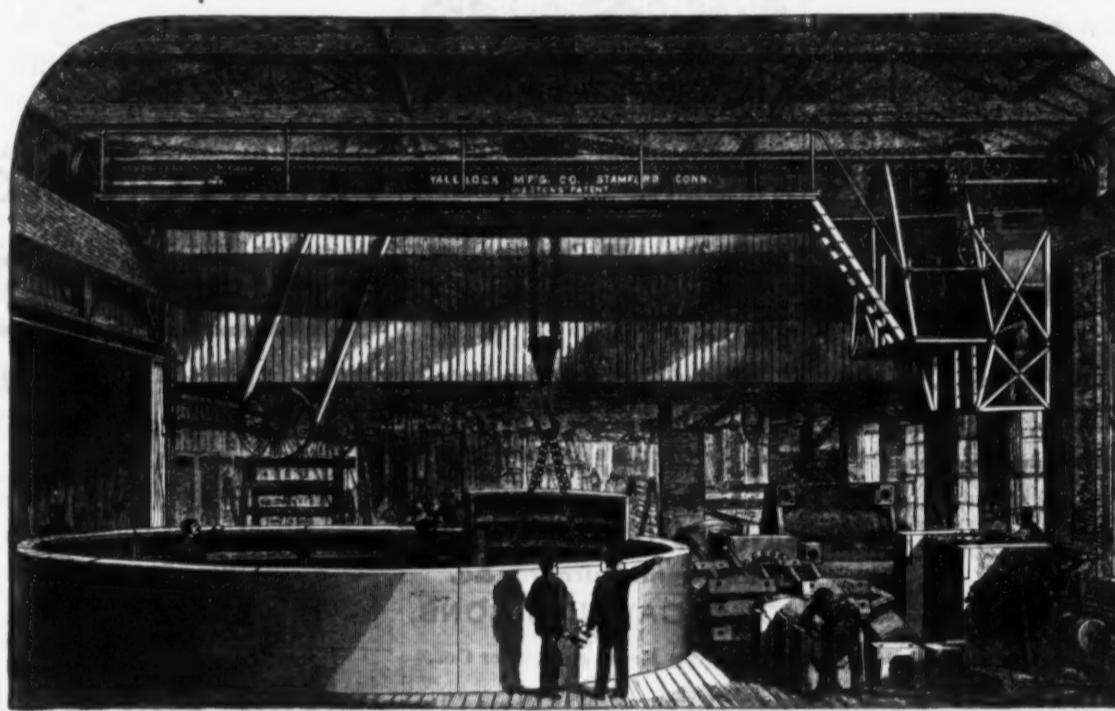


Fig. 2.—General View of Weston's Patent Power Traveling Crane.

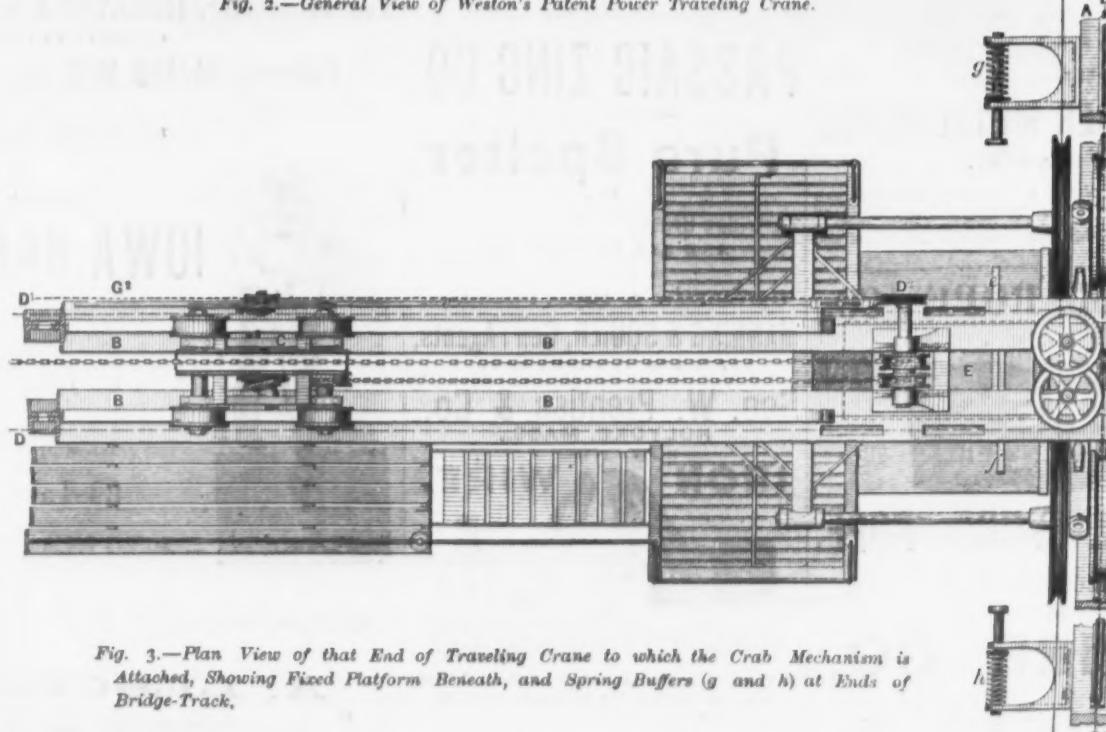


Fig. 3.—Plan View of that End of Traveling Crane to which the Crab Mechanism is Attached, Showing Fixed Platform Beneath, and Spring Buffers (g and h) at Ends of Bridge-Track.

### RECENT IMPROVEMENTS IN CRANES.

airly remunerative and mainly satisfactory, although doubtless largely made so by the strike which commenced in the Pittsburgh and Wheeling districts on the 1st of June and continued until October 1,

shipments of ore from Bilbao have trebled. The total quantity of iron ore shipped from this port during the year 1878 was 1,455,255 tons; in 1879, 1,160,243 tons; in 1880, 2,390,732 tons; in 1881, 2,550,549 tons, and

the 10th of March, when 36 steamers and sailing vessels entered the river. The total number of ships which entered the port in 1882 was 5244, having a registered tonnage of 2,285,684 tons.

### Recent Improvements in Cranes.

The Yale Lock Manufacturing Company, of Stamford, Conn., have recently made improvements in the construction of traveling, jib, pillar and other cranes, operated by either hand or power, which have attracted a great deal of attention, and a description of these improvements will therefore undoubtedly prove of interest to our readers. The salient features of these cranes, which will be found further on described in detail, consist in the adaptation of the T. A. Weston patent system of propulsion, combined with the T. W. Capen patent crab, reversing and other mechanisms for the purposes specified, resulting in the production of cranes possessing marked advantages. We shall describe the different kinds of cranes made by the Yale Lock Manufacturing Company, by selecting from those at present in use such as are typical of their class, the general principles of construction being the same for each type, though of course they vary in dimensions of parts and details.

The first type of crane to which we desire to call the attention of our readers is very well represented by the heavy 25-ton traveling crane, a general view of which is shown in Fig. 2. The machine consists of a bridge moving on longitudinal tracks, and a trolley moving on the bridge. At one end of the bridge is a crab containing the operating mechanism, and suspended beneath this is the operating platform. Power is communicated to the crane by an endless wire rope which moves continually in one direction. The mechanism is such that the operator standing upon the suspended platform is enabled, by means of three levers, to apply the power so as to cause the bridge to travel longitudinally on the tracks, or the trolley to travel in either direction across the bridge, or to raise or lower the load. The bridge and trolley may be moved independently or simultaneously, as may be required. Fig. 4 is a perspective diagrammatic or outline view of an entire traveling crane, indicating the moving cable for transmitting power, by the heavy line on the right, which passes around the driven wheel F, the two fixed cables D and D' for propelling the bridge, and the endless chain passing from the crab to the trolley, &c. The parallel longitudinal main tracks upon which the bridge travels back and forward are indicated by A; the bridge resting upon these tracks, by B; the trolley, adapted to travel to and fro upon the bridge, by C; the crab is represented by E, and the fixed cables, engaging by means of sheaves with the bridge and crab, by D D'. These fixed cables are provided with suitable guide-sheaves above the crab, whereby the cables are deflected downward into engagement with their grip-wheels outside the crab-frame. The crab mechanism E does not travel with the trolley, but is fixed beneath one end of the bridge, and adapted to be driven by power to operate the bridge in connection with the fixed cables, to traverse the trolley and to do the hoisting and lowering by means of chains and suitable shipping levers under the control of the operator.

The bridge for the 25-ton overhead traveling crane under consideration consists of two wrought-iron riveted plate girders, 60 feet long over all. These girders are 4 feet 6 inches deep at the center, and 2 feet 6 inches at the ends. The flanges are formed of two 6 x 6 x  $\frac{3}{4}$  inch angles for the top and of two 6 x 4 x  $\frac{3}{4}$  inch angles for the bottom flange. The web is formed of  $\frac{1}{2}$ -inch wrought-iron plate with suitable stiffeners. The girders are so dimensioned that under the maximum load—load suspended at center—the outside fiber strains do not exceed one-sixth of the ultimate strength of the iron. The fixed cables D D' extend each from one end of one of the longitudinal tracks to the opposite end of the other track, crossing the space between the tracks upon the bridge which carries the crab mechanism and trolley, and serve, one with the other, to impart the horizontal movements to the bridge, which mode of propulsion is covered by the T. A. Weston patent. These fixed wire cables, after passing around proper guide-sheaves at each end of the bridge, engage with grip-wheels on the crab. These grip-wheels can be rotated by power in either direction, the effect of which is to steadily pull the bridge along in either direction desired. Under this system the absolute parallelism of the end trucks of the bridge with their tracks is assured, so that the bridge moves always smoothly and with the least possible friction. In the 25-ton crane under consideration the truck wheels are 36 inches in diameter, with chilled tread, double flanged. Their axles are of iron,  $4\frac{1}{4}$  inches in diameter, running in spherical bronze boxes. The driving-rope employed is a  $\frac{1}{2}$ -inch cotton rope, running at a speed of 3000 feet per minute. The driving and driven wheels are 4 feet in diameter, with polished grooves, arranged with idlers 3 feet in diameter, so that the rope has a contact of  $180^{\circ}$ . The shaft that carries the first driver on the bridge is  $2\frac{1}{4}$  inches in diameter, making 400 revolutions per minute. The trolley-wheels are 15 inches in diameter on tread.

In order to effect the several operations of the crane it is necessary that the mechanism should be capable of hauling in or paying out either one or two separate chains or ropes independently of the other, and also capable of paying out both of the ropes simultaneously, or of hauling them in simultaneously; also that it should be capable of paying out the one and hauling in the other

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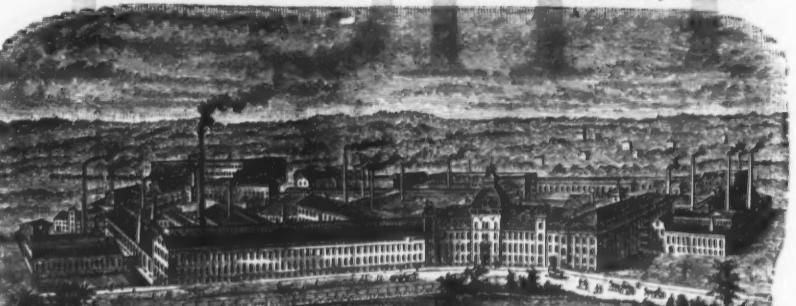
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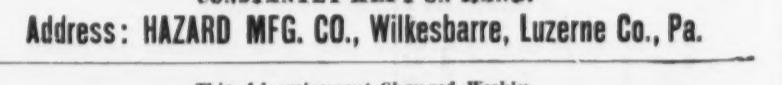
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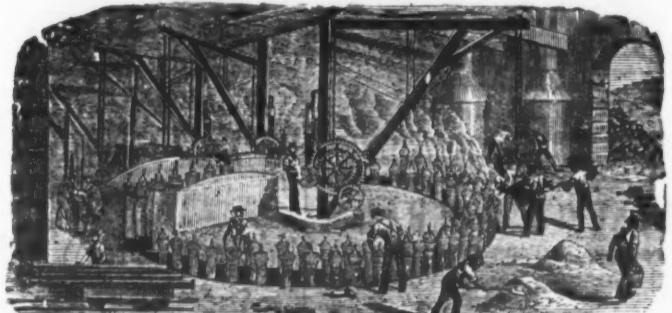




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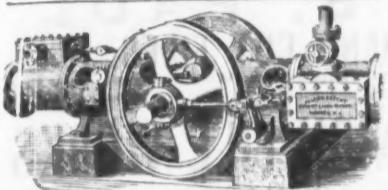
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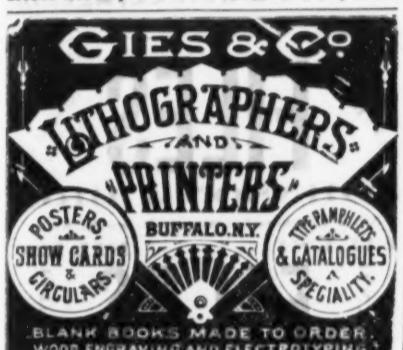


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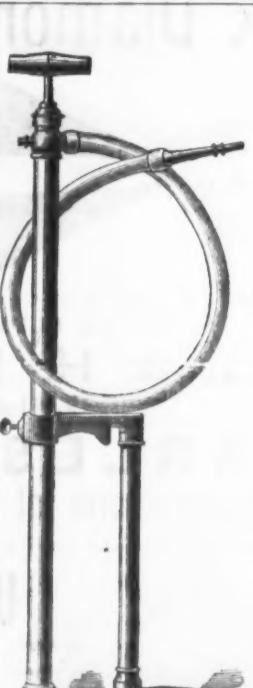
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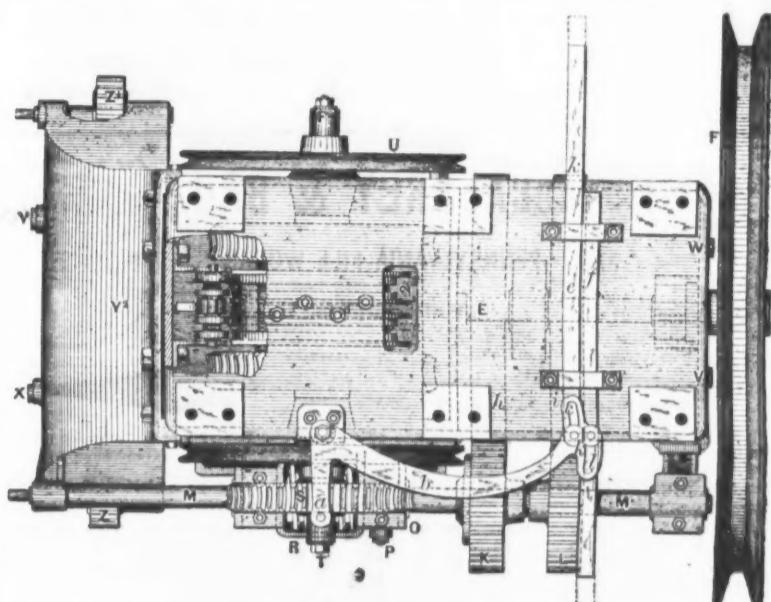
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to be in the neutral position shown in Fig. 11, when it is desired to move the bridge the shipping lever Q is moved by the operator to the right or left, to engage one or the other of the clutches N, which will result in moving the bridge. The effect of the movement of the shipper-lever will be, through the instrumentality of the bell-crank lever b, to

thrust of the spring buffer upon the thrust-rods from extending too far, there is provided a suitable stop upon each thrust-rod, as shown at k, in Figs. 11 and 12.

In order to keep the load from running down, an automatic brake mechanism is applied to each of the two auxiliary shafts. This brake consists in each case of a brake-



Recent Improvements in Cranes.—Fig. 11.—Plan View of Crab Mechanism, with Bridge Removed and the Frame Partly Broken Away to Show Parts Inside of the Crab.

thrust forward one or the other of the thrust-rods e and f into the position indicated in the dotted lines, Fig. 11, and the movement of the bridge will always be in the direction toward which that rod points which is thrust forward. Now, when the bridge arrives near

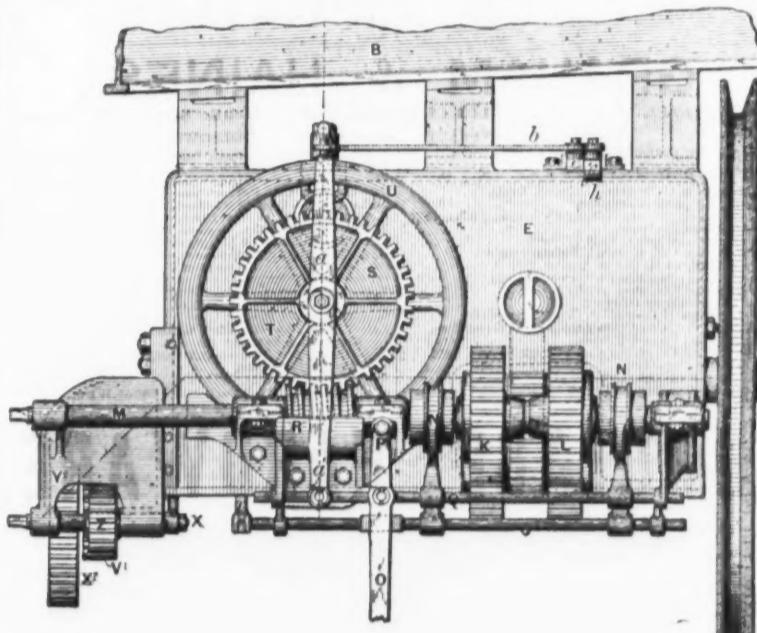


Fig. 12.—Side Elevation of Crab Mechanism.

enough to the end of the tracks, so that the thrust-rod which has been projected outward impinges against the spring buffer or stop, the effect will be that the buffer will push back the advance thrust-rod and move the bell-crank lever and shipper-rod Q, so that the clutch which had been engaged will be lower with projecting shoulders which extend beyond the bolt, so as to bear against the under side of the fixed lug. Beneath this follower within the slot is a swinging bar or lever having a V-shaped top-bearing, which impinges against the under side of the follower. The result is that when this

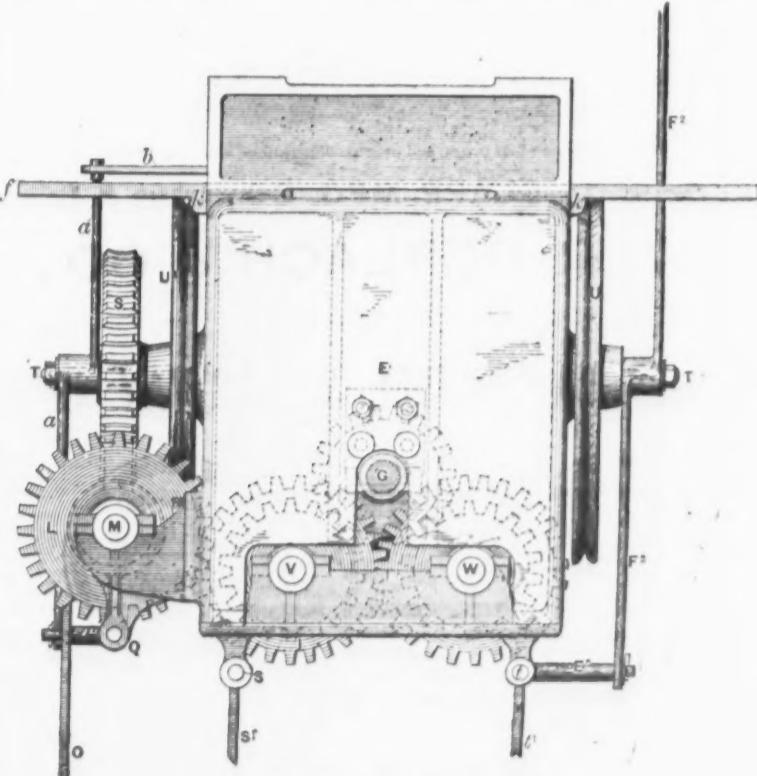


Fig. 13.—End Elevation of Crab Mechanism.

thrust into the neutral position again, and both clutches will then stand in that position, and the propelling power for advancing the bridge will then be cut off. Then the spring buffer will yield to the momentum of the advancing bridge (of course somewhat checking it) until the bridge comes to rest. The slots c and d enable each thrust rod to be moved the proper distance without moving the other. In order to prevent the inward swinging bar is in a perpendicular position, the movable lug will be drawn down so as to clasp the brake-strap firmly around the shaft, and thus apply the brake. Whenever the swinging bar is to one side or the other out of the perpendicular position, the movable lug will be raised by the spring and the brake will be released. In order to operate this brake, the swinging bar is jointed at its lower end to an extension of the shipper-rod

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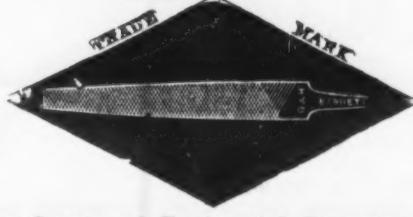
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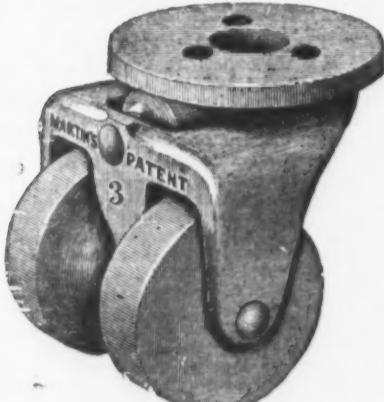
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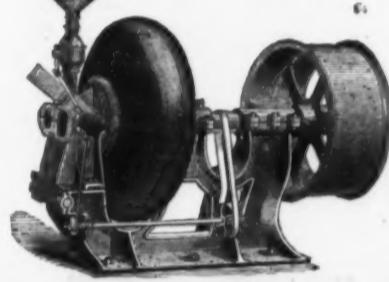


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**NOTICE.**—We guarantee the base of our Spoons, Forks, &c., to be full 18 per cent. Nickel Silver, and extra heavily plated with pure Silver. Our goods are all hand burnished, and are first-class in every respect. We pack our Spoons and Forks one dozen in each box.

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### DUC'S Mechanical ATOMIZER Or Pulverizer,

For reducing to an impalpable powder all kinds of hard and brittle substances, such as QUARTZ, EMERY, CORUNDUM, GOLD AND SILVER ORES, BARYTES, COAL, OCHRE, MANGANESE IRON ORES,

### PHOSPHATE ROCK, &c.

It is simple and not liable to get out of order. Revolving Shell being constructed of Siemens-Martin steel, and all parts mechanical in design and of first-class construction. Weight, 5,500 lbs.; heaviest piece, 1,500 lbs. It will pulverize **7 TO 10 TONS IN 10 HOURS** with 30 H. P.

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**THOS. F. ROWLAND, Sole Manuf'r, Brooklyn, N. Y.**

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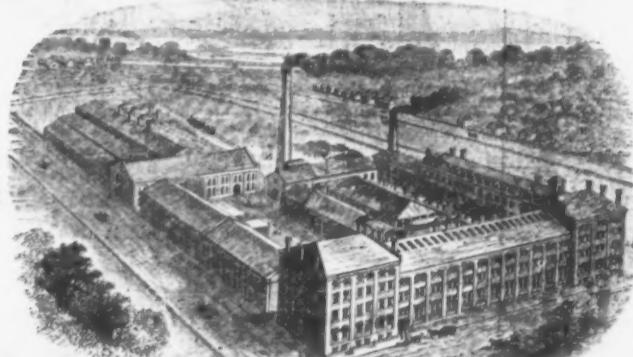
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Pulley Blocks,

Hoists, Crabs

AND

Winches.

a system of clutches of great durability, in which the only wear is taken upon the thin disks of sheet metal that are cheaply and easily replaced.

We are greatly indebted to Mr. Henry R. Towne, the president of the Yale Lock Manufacturing Company, for his courtesy in affording us every facility in the inspection of the works, and in obtaining information concerning the details of the construction of these cranes.

### LATEST LEGAL DECISIONS.

#### CHATTEL MORTGAGE.

The mortgagee under a chattel mortgage after the debt to him became due went upon the premises of the mortgagor and took away the mortgaged property in a peaceable manner. An action of trespass was brought against him, and the trial court charged the jury that the failure to pay the debt did not confer upon the mortgagee the right to take possession of the property against the will or without the consent of the mortgagor, and a verdict was found for the mortgagor. The case—*Street vs. Sinclair*—was carried to the Supreme Court of Alabama, which decided in favor of the mortgagee. Judge Somerville, in the opinion, said: "After the failure of the mortgagee to pay the debt the mortgagee had the right to take possession of the mortgaged property, and he could enter upon the premises of the mortgagee for the purpose of taking possession, and seize the property if he could do this without force or violence. Subject to this limitation, the owner of personal property, wrongfully withheld from him, may have redress by his own act, without resorting to the delay of litigation. But he proceeds at his own peril if he commits the slightest breach of the public peace; for if individuals were thus allowed to redress their own private injuries, the peace of society and good order of government would cease."

#### TAKING WATER-COURSE FOR PUBLIC USE.

A water company in California took proceedings to condemn the waters of a creek which ran through the lands of a private person, and the right to do this was denied. The water company succeeded in the case—*St. Helena Water Co. vs. Forbes*—and the land owner appealed to the Supreme Court of California, which affirmed the judgment below. Judge Ross, in the opinion, said: "The only question about which we have any serious doubt is whether the statutory authorizes the condemnation of the particular kind of property here sought to be taken. It authorizes the taking of: 1. A fee simple. 2. An easement, when taken for any other use. 3. Entry upon and occupation of land to take earth, gravel, stones, trees and timber for public use. The right of the defendant in this stream is not an easement in him; it is annexed and passes as a parcel of his land. He could sell and divert the use of the water to the plaintiff here, and so sell an easement in his land, and this like easement can be taken through proceedings to condemn the right under the statute by virtue of the power of eminent domain."

#### TAKING LAND FOR A PUBLIC USE—TENANTS IN COMMON.

Proceedings were taken in Connecticut to condemn certain land for a public use by town authorities, and one John H. Stevens alone was made the respondent, under the supposition that he was the sole owner. He was, however, one of several tenants in common, and, on this being learned, a second proceeding was taken to condemn the property of the other co-tenants, and the land was duly condemned and taken. The owners then brought actions of trespass, on the ground that, as no tenant in common can make a valid deed to convey the land held in common, no proceeding to condemn land will be effective unless taken against all the co-tenants, but they were defeated, and they carried the case—*Stevens vs. Battell*—to the Supreme Court of Errors of Connecticut, which affirmed the judgment. Judge Carpenter, in the opinion, said: "With some hesitation we have come to the conclusion that, inasmuch as the proceedings were taken to condemn the land itself, all the rights of Stevens were acquired by the town; the object is to make compensation to the owner and extinguish his title."

#### CORPORATION—AUTHORITY TO MAKE CONTRACT.

A corporation made a joint promissory note and received the full benefit of it, but on being sued for it the defense was set up that, as the corporation had no authority to make the note, it was not bound by it, and the trial court, sustaining this defense, gave the corporation judgment. The plaintiff carried the case—*Wright vs. Antwerp Pipe Co.*—to the Supreme Court of Pennsylvania, by which the judgment was reversed. Judge Paxson, in the opinion, said: "The defense that a corporation had not the authority to make a contract is never sustained out of regard to the corporation, but only where an imperative public policy requires it. The defendant here had received in exchange for this note full value, which it proposes to retain without paying the note. It would be difficult to imagine a defense with less merit, and the law would be exceedingly impotent were it to allow it to succeed."

#### FIRE INSURANCE—EXPLOSION—TERMINATING POLICY.

In an action for a loss under a fire policy, the insurer set up as his defense that there was an explosion, and that by the terms of the policy it was ended upon the happening of the casualty. The condition of the policy was as follows: "This company shall not be liable by virtue of this policy, or any renewal thereof, for any loss caused by the bursting of a boiler, or by explosion from any cause; and if the premises insured be damaged or destroyed by the bursting of a boiler, or by explosion from any cause, this policy shall be null and void the instant the casualty by explosion occurs." In this case—*Waldeck vs. Springfield Fire and Marine Insurance Company*—the trial judge decided that the bursting of the boiler, by which the insured buildings and property were damaged, instantly terminated the policy, and hence that the defendant company is not liable thereon for the subsequent loss by fire. The plaintiff appealed to the Supreme Court of

Wisconsin, which affirmed the judgment. Judge Lyon, in the opinion, said: "The plaintiff's counsel asks us to decide that the word 'casualty' means 'fire,' but we do not see how the stipulation could be more plainly expressed than it is in this policy. Indeed, the language is so plain that there is no room for construction. The 'casualty' is the damage from the happening of the explosion, and, in view of the hazardous nature of risks on premises where steam power is used, the stipulation seems to be a very proper one."

### INDUSTRIAL ITEMS.

#### MASSACHUSETTS.

The Williams Manufacturing Company is the firm name of a new stock company organized, with a capital stock of \$200,000, for the manufacture of twist drills, awls, bodkins, &c. All the stockholders of the new company belong in Boston and New Bedford.

The name of the new company which have taken the long unoccupied "file-works" property at Ballardvale, is the Craighead & Kintz Manufacturing Company, and they will make kerosene fixtures, chandeliers and other similar castings in iron, bronze, spelter, &c. Their New York headquarters will be at 33 Barclay street and 38 Park Place, and their Boston store at 52 Pearl street. The company is the outgrowth and reorganization of the Craighead & Elwood Manufacturing Company, of Bridgeport, Conn. The new company includes well-known business men of Boston and Andover, and will give employment at first to 300 hands and eventually to 500.—*Boston Commercial Bulletin*.

The Holyoke Foundry Company have 50 men employed. A large portion of their work comes from the Deane Steam Pump Company.

#### CONNECTICUT.

The Billings & Spencer Company, Hartford, now manufacture upward of 200 different articles for parts of guns, pistols, sewing machines, special machinery and machinists' tools, besides manufacturing a large variety of goods in a finished state.

The Yale Lock Manufacturing Company, Stamford, have entered into arrangements under which they intend developing the numerous inventions in scales, gauges and testing machines of Mr. Albert H. Emery, the inventor and designer of the celebrated Government testing machine in the arsenal at Watertown, Mass. They are at present building three 50-ton Emery testing machines.

Work on the new machine shops at Windsor will be started as soon as the charter is obtained.

#### NEW JERSEY.

The Trenton *Times* of the 10th says: "The heaviest iron ever worked at the rolling mill in this city was rolled there yesterday. It consisted of two 15-inch girders, each weighing 4,100 pounds before being charged. Twenty-two men were required to put them in the furnace, and double that number to roll them. The rolling was done by John McLean and the beaters were Thomas Stanton and John Lambert. When taken from the furnace the girders each measured 54 feet long. The engine, with its immense fly-wheel weighing 40 tons, in charge of John A. Logue, was run at 75 revolutions per minute, and rolled the heavy iron with perfect ease. The girders were made for the Yale Lock Mfg. Co., of Stamford, Conn., whether they will be immediately shipped."

#### PENNSYLVANIA.

The Steel Ore Company, of Pottstown, which is composed of Messrs. Gabel, Jones & Gabel, have leased the furnace at Bechtelsville, Berks county, and changed its name to Norway Furnace. Mr. Griffith Jones, the superintendent, informs us that the furnace was blown in on the 5th of January, and has been doing very well ever since.

There is a prospect that ax making at Beaver Falls will be resumed before long. On November 9th, Hubbard, Bakewell & Co. closed the ax department of their Beaver Falls establishment, throwing 82 men out of employment. The men are still idle, and as the probability of going back to their old positions have been none too great, they are considering the erection of a co-operative factory. Offers have been received from both Youngstown and Canton, agreeing to furnish the ground and subscribe \$5000 in stock if the men will build a co-operative factory—an idea that is favorably looked upon. A meeting has been held in Beaver Falls to discuss the project, but no action was taken except to appoint a committee to investigate the offers from Youngstown and Canton. The people of Beaver Falls do not want the ax-makers to depart. Many of the men own their homes, and they are valuable residents. The Economic Society looks upon them with a partial eye, and it is thought before allowing them to depart will furnish the necessary aid to put up a co-operative factory at Beaver Falls. It is understood that within ten days Hubbard, Bakewell & Co. will lay a proposition before the men, giving them the choice of working at a reduction or of buying their factory. With the men that point has come when they can no longer remain idle, but must work.

The Reading Iron Works have again put their rolling mill in operation.

Floyd, Wells & Co. is the name of a firm that will take possession of the foundry formerly occupied by the Keeley Stove Company, at Royersford, Montgomery County. They will manufacture stoves, &c., extensively, and expect to start about April 1st. Isaac Brooke, formerly of Pottstown, is a member of the firm.

Orders have been received at the Pennsylvania and Reading machine shops, Reading, for the lathe department to make overtime by working at night for the next two weeks, and the hands are consequently at work every evening until a late hour. This is welcome news to the employers. The shops now present a busy scene, no less than 30 engines being on the stocks undergoing repairs. About 20 more are being built, and

# H. D. SMITH & CO., Plantsville, Conn.,

Manufacturers of the

## BEST QUALITY CARRIAGE MAKERS' HARDWARE,

Manufacture the Largest Variety of Forge Carriage Irons, of Best Material and Workmanship.

PRICES LOW FOR QUALITY OF WORK FURNISHED.

SEND FOR PRICE LIST.

### 1000 KENNEDY RIFLES.



### IMPROVED SYSTEM FOR REPEATING RIFLES!

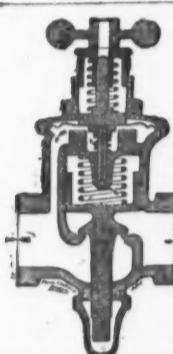
The Manufacturers claim for the "Kennedy" great superiority over all other magazine arms, and the increasing demand is met by largely increased production. The solid metal in line of fire at time of discharge protects the shooter against all accidents. The .44 cal. rifles use "73 Model" cartridges, 40 grains powder, 200 grains lead; and the .45 cal. rifles use "76 Model" cartridges, 60 grains powder and 300 grains lead.

Sporting Rifle, 24 in., Octagon Barrel, 15 shots, .44 cal., - - - - -	\$27.00	Sporting Rifle, 28 in., Octagon Barrel, 11 shots, .45 cal., - - - - -	\$31.00
Sporting Rifle, 24 in., Round Barrel, 15 shots, .44 cal., - - - - -	25.00	Sporting Rifle, 28 in., Round Barrel, 11 shots, .45 cal., - - - - -	29.00
Carbine, 20 in., Round Barrel, 12 shots, .44 cal., - - - - -	24.00	Carbine, 22 in., Round Barrel, 8 shots, .45 cal., - - - - -	27.00

Double Set Triggers, \$5 extra. Extra Length Barrels, \$1 each inch.

### HARTLEY & GRAHAM, 17 and 19 Maiden Lane, New York.

CIRCULARS TO THE TRADE.



Curtis  
Pressure  
Regulator,  
FOR  
STEAM AND WATER,

Is made entirely of metal occupies the same space as a globe valve. It has no glands or packing, and is a quick valve. Write for circular. Manufactured by

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Plymouth, Mass.,

Manufacturers of Copper, Brass and Iron Rivets; Common and Swedish Iron, Leathered, Carpet, Lace and Gingy Tacks; Finishing, Hungarian, Trunk, Clout and Cigar Box Nails, &c. Rivets made to order.

NEW YORK AGENCY,  
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HARDWARE,  
165 GREENWICH STREET,  
Agents for the Philadelphia Star Carriage and Tire Bolts.



RÖMER & CO. Established 1837. Manufacturers of Patent Scandinavian or Jail Locks, Brass Padlocks for railroads and switches, Carriage Lamps and Lanterns, 141 to 145 Railroad Ave., Newark, N. J. Illustrated catalogue sent to the trade on application.

### AXLES

All kinds Wagon & Carriage Axles  
Manufactured by the  
**LAMBERTVILLE IRON WORKS,**  
LAMBERTVILLE, N. J.  
Send for Prices.

### MINERS' CANDLES.

Superior to any other Light for Mining Purposes. Manufactured by  
**JAMES BOYD'S SON,**  
Nos. 10 & 12 Franklin St., New York.

### THE BAKER GUNS.

OUR DOUBLE GUN. OUR NEW THREE- MODEL BARREL GUN.

EVERY GUN WARRANTED.

Price, Best English twist barrels, \$45. Damascus Steel, \$60 to \$200. Liberal Discount to the Trade. SEND FOR DESCRIPTIVE CIRCULAR.

L. C. SMITH. Maker, SYRACUSE, N. Y.

The gun is light and compact, from 9 to 10 lbs. weight. The rifle is perfectly accurate.



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AGENTS:

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S. G. B. COOK & CO., - - - - Baltimore.

Correspondence Invited.



FOUNDRY FACINGS, PLUMBAGO & FOUNDRY SUPPLIES.

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Manufacturers of and dealers in all kinds of

FOUNDRY FACINGS AND BLACKINGS,

PLUMBAGO AND FOUNDRY SUPPLIES.

Capacity of Works, 650 Barrels per day.

HEAVY MACHINERY and FINE STOVE PLATE FACINGS A SPECIALTY.

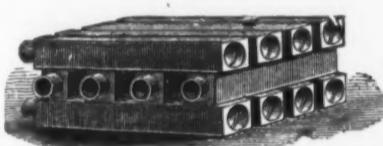
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## CHAIN PUMP TUBE

Special prices to the wholesale trade for the next 30 days.

122 Railroad Avenue, ELMIRA, N. Y.

R. COOK & SONS,

Manufacturers of

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ESTABLISHED - - - - - 1839.

N. Y. MALLET and HANDLE WORKS



Manufacturers of  
Calkers', Carpenters', Stone Cutters',  
Tim., Copper and Boiler Makers'

MALLETS,

Hawsing Beetles, Hawsing and Calking Irons;

also all kinds of Handles, Sledge, Chisel and Hammer Handles. Also

COTTON AND RALE HOOKS.

Patented Feb. 13, 1877; a new combination of Hooks.

436 E. Houston St. New York City.



Keystone Screw Co.,  
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J. BILLERBECK,  
Manufacturer of  
Iron Gimlet-Pointed Wood Screws.

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Brass, Galvanized & Ship  
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ADAPTED TO  
MECHANICAL PURPOSES.

### RUBBER BELTING and PACKING.

Machine Belting,  
Steam Packing,  
Leading Hose,  
Suction Hose,  
Grain Elevators,  
Steam Hose,  
Piston Rod Packing,  
Gaskets and Rings,

This company manufactured the famous DRIVING and ELEVATOR BELTS for the Buckingham Elevators at Chicago, which have been running successfully for more than Twelve Years, also those for Arrow, Dole & Co., of Chicago, Vanderbilt's Elevators for the Y. C. Central, Hudson River R. R., the great Elevators of the Penna., and Erie Railroads, of Jersey City and Hoboken, Dow's Stores, of Brooklyn, and many others; in fact, the largest Belts for the largest Elevators in the world.

A single carrier belt in the Penna. R. R. Elevator is over 2000 feet long, weighing 15,000 pounds, and has run perfectly from the start.



Vacuum Pump Valves,  
Ball Valves,  
Car Springs,  
Wagon Springs,  
Gas Tubing,  
Machine Belting,  
Billiard Cushions,  
Emery Wheels.

The work is being pushed forward as fast as possible. It is stated that all these engines will be needed as soon as they can be finished, on the Reading road and its branches, to accommodate the heavy traffic, and that it is highly probable that the coming season will be a very busy one for the employees of the company.

### PITTSBURGH AND VICINITY.

The great 17-ton steam hammer at the Black Diamond Steel Works, of Park Bros. & Co., has revolutionized many features of the iron and steel business in America. Since its erection two years ago it has accomplished many things that before could only be done at Krupp's famous workshops in Germany or at other European establishments. Its latest achievement was made only the other day. There was manufactured by it a large roll for the sheet mill, the ingot weighing about 70 tons. This is said to be the first hammered roll ever made in this country. Heretofore they have been cast. The experiment was a success, and it is presumed that more will be made in the same manner in the future. Something very curious has happened to this immense hammer. Our informant says the anvil block on which the dies rest has sunk down in the earth almost out of sight. It is a monster mass of iron, weighing 160 tons, and to get it out again will require some ingenuity indeed. The accident has not interfered with the operation of the machine at all, as the dies can be adjusted to obviate the difficulty. Although the foundations of the block were laid in concrete, the soil was gravel and other soft earth, having once been the bed of the Allegheny river.—*Pittsburgh Post*.

Work will be begun about the 1st of March on the new Elba Iron and Bolt Works, on Second avenue, near Elba Station. The iron-work on the new buildings will be a portion of that used in the Main Building at the Centennial Exposition, from which so many Pittsburgh iron works have derived material for building.

### VIRGINIA.

According to the Roanoke Review, a corporation known as the Rorer Iron Company has recently been formed at Roanoke, with a capital of \$300,000. The company is said to own some 3000 acres of land, most of which is rich in magnetic iron ore, situated in Cave Spring, district, in the western part of Roanoke County. The company, it is understood, will build a narrow-gauge railroad at once from their mines at Gile, to intersect with the Shenandoah Valley Railroad, in the west end of Roanoke. On the Roanoke River the company will also erect, as early as practicable, a large furnace, which will be on the line of the narrow-gauge railroad, and as soon as the latter is completed the shipment of ore will be commenced.

### WEST VIRGINIA.

The Moundsville Rolling Mill, operated by the A. Kloman Steel and Iron Co., is in the hands of the sheriff of Marshall County. The company is composed of W. H. Carruthers, who was formerly engaged in the iron business in Cincinnati, and A. C. and C. H. Kloman, of Pittsburgh. Mr. C. H. Kloman states that the execution against the company on which the levy was made by the sheriff was issued at his own instance. The amount is only \$8600, and while no idea of the assets or liabilities of the firm could be obtained, Mr. Kloman stated that it was not certain that the company would go into liquidation. In any event the Pittsburgh firm will not be affected, as there has been no connection between the two companies. Mr. Kloman declined to say anything concerning the cause of the issuance of the execution, but it is reported that the action is the result of a disagreement among the partners. The company purchased the Moundsville mill property about a year and a half ago, and have since been engaged in the manufacture of merchant iron. The capacity of the mill is about 30 tons per day, and 120 men were employed. These men will be thrown out of employment until the troubles of the company are settled.

### OHIO.

The Newark Machine Co. have resumed operations with 128 hands, and will put on 60 to 80 more in the next 30 days. They have put into their shops a large quantity of new and improved machinery and tools, and are now in condition to build 600 Victor clover hullers, 2000 horse grain rakes and 2000 Keller grain drills. They have put into their new shops a new Sturtevant blower, which takes out of the wood shop all the shavings and dust.

The Powell Tool Works, corner of Elm and Washington streets, Cleveland, have been badly damaged by fire. The loss will amount to \$10,000; fully insured.

Machinery for the manufacture of the Zero ice machines has just been put in the Zero Ice Machine Works of Silas Merchant, on the lake shore, just east of Case avenue, Cleveland.

Five-months' orders are in hand by the Lima Machine Works, builders of light locomotives, giving good assurance of steady work for their 125 hands. They were established in 1869.

The Cleveland Co-operative Stove Co. will build extensive additions to their works the present season, giving them increased molding, mounting and storage facilities.

Mr. T. R. Butman, of the Butman Furnace Company, Michigan street, has recently designed a new locomotive fire-box, so arranged that the fireman, by simply pressing his foot upon a short piece which projects through the foot-board, moves a lever beneath and thus unlatches and opens the door. The convenience of this device must be evident at a glance to any one who has watched the efforts required at present to unlatch, open and close the door with each shovelful of coal. It is understood that the Lake Shore and C. C. and I. roads are to use it.—*Cleveland Trade Review*.

The employees of the Cleveland Furnace Company, operating the blast furnace of the Steubenville Coal and Iron Company, had attachments issued last week on their employers for wages due and unpaid. The builders and owners of this furnace had poor success in running it, losing a great deal of money, and the present operators have just concluded making an agreement with large

creditors to settle by accepting partial payments at specified times within the year, at the end of which a settlement in full is to be made. The Cleveland Furnace Company is composed of Cleveland capitalists of good resources, and will pull through all right, no doubt.

The Tiffin Tool Company have lately organized and moved into their fine brick building, donated by the citizens of that enterprising place. The main building is 40 x 120; engine-house, 24 x 28; size of engine, 40-horse-power, built by the Buckeye Engine Company, of Salem. They will employ about 40 hands when under full headway. The specialties are adjustable hoes, rakes, forks and shovels, Diamond scuffle or weeding hoes, goose-neck hoes and Howe's socket mallet, ice-picks and crushers.

### ILLINOIS.

The Bergen Tool Company, of Batavia, have recently doubled their capital stock, and have added quite a number of tools to their works.

The affairs of the Union Iron and Steel Company are in the hands of Mr. A. L. Griffin, vice-president of the company, who is acting as receiver in accordance with the orders of the court.

The new wire mill of the Lambert & Bishop Wire Fence Company, of Joliet, will contain large benches of rippling, medium and small-size wire machinery, and an extensive cleaning, bluing and drying plant; also an improved annealing plant. Another department will be devoted to a system of galvanizing based upon entirely new principles. The basement of the building will be occupied by extensive barb-wire machinery of all descriptions, and to the whole will be added the usual fitting and repairing shops necessary to a large establishment. The plans have been prepared by Mr. G. M. Rose, late of Birmingham, England, who has been appointed superintendent of the works. Mr. Rose has been for the past eighteen years identified with the wire and steel-making business in Europe. He was for several years engineer for the celebrated Dr. C. W. Siemens, of London, and during his connection with him erected several different plants for producing steel for wire. He also put in the Albion steel and wire plant of Sheffield, England, and a portion of Richard Hill & Co.'s wire plant, at Middlesboro-on-Tees, England.

The Chicago Malleable Iron Company are employing 700 men in their works.

### MISSOURI.

The Excelsior Foundry and Plating Company have enlarged their foundry by the addition of another room, 75 x 25 feet, and increased the capacity of their cupola to 100 pounds of running iron per minute. They have also put in a new crane, erected another rolling mill for rolling castings, and have increased their working force about 100 per cent. They are now prepared to make heavy as well as light castings, are busy and full of orders.—*Age of Steel*.

The Granite Iron Rolling Mills of the St. Louis Stamping Company are running full in every department, and have turned out more galvanized and stamping iron within the last two weeks than at any other equal period in their history.—*Marquette Mining Journal*.

### KENTUCKY.

Ashland Furnace made 200 tons of pig last week, working on raw coal alone. The furnace of the Norton Iron Works is making 70 tons per day. The nail mill was to have started up last Monday.

### INDIANA.

Car building seems to be quite active, considering the season. The car works of Indianapolis are at work on a contract for 250 car loads of 20 tons capacity for the Vandalia line. The Chicago and Northwestern company are building 20 passenger coaches. The Lafayette Car Works, Lafayette, have contracts for 1000 cars for the Rochester and Pittsburgh road, and 2000 for the New York, Chicago and St. Louis Company. For the East River Bridge, New York, 30 cars have been ordered, each 47 feet long, and similar in construction to those employed on the elevated railroads.

### IOWA.

A great bridge is now under construction for the Sioux City and Pacific Railroad, across the Missouri river, 20 miles north of Council Bluffs. The piers are of iron, filled with concrete masonry, and the superstructure is also of iron. The bridge will be 1000 ft. in length, and cost nearly \$1,000,000.

We have received a circular from Mr. E. H. Talbot, secretary of the National Exposition of Railway Appliances, dated at the Grand Pacific Hotel, in Chicago, in which he calls attention to the importance of having a full collection of old articles pertaining to railway building and operation exhibited at the coming Exposition. Although many men now living remember the very beginning of railways in the United States, and can vividly describe the early appliances, yet even in the oldest States it is almost as difficult to come across an example of the primitive work as it would be to find any of the apparatus pertaining to the transportation service of an ancient Roman army.

Comparatively little attention has been paid by the older roads to the preservation of specimens of their cars, engines, rails and other apparatus. If we remember rightly, it is only ten years ago that, for want of storage space, one of the earliest cars built by Osgood Bradley, of Worcester, Mass., for one of the New England roads, was destroyed or allowed to go to ruin. An exhibition like that which is to be held at Chicago will do a vast amount of good, by calling attention to the older articles and causing the railroads to rescue from the scrap-heaps such articles as may illustrate the state of the art at an early day. We publish elsewhere Mr. Talbot's circular entire.

## PHOSPHOR-BRONZE

FOR

BEARINGS,

SLIDE VALVES,

CYLINDER RINGS,

CROSS-HEAD GIBBS,

STEPS,

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# The Iron Age

AND  
Metallurgical Review.

New York, Thursday, February 15, 1883.

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JAMES C. BAYLES  
JOHN S. KING

Publisher and Proprietor.  
Editor.  
Business Manager.

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## The Production of Pig Iron in 1882.

The American Iron and Steel Association have, at this early date, completed the collection of the statistics of last year's pig-iron production in the United States. The total quantity turned out by our blast furnaces was 5,178,122 tons of 2000 pounds, or 4,623,323 tons of 2240 pounds. This is over 11 cent. more than was produced in 1881, in which year 4,641,564 net tons, or 4,144,254 gross tons, were made. The actual increase therefore was 479,069 gross tons. The production of 1881 and 1882, classified according to the fuel used, is shown in the following table:

	1881.	1882.
Fuel.	Net tons.	Net tons.
Bituminous	2,263,764	2,438,078
Anthracite	1,734,624	2,042,138
Charcoal	636,838	657,900
Total	4,641,564	5,178,122

The figures here given for the production of 1882 are so large that they furnish ample food for reflection. The total quantity produced is not only larger than that turned out in any previous year, but it is very much larger. It is nearly twice the quantity produced four years ago, and two and a half times the quantity produced six years ago.

The bituminous pig iron made in 1882 exceeded the total production of pig iron in the United States in the years 1875, 1876 and 1877.

The total of anthracite pig iron made in 1882 was nearly as large as the total pig-iron production of the country in 1876, and was more than the entire production in 1871.

The charcoal pig iron made in 1882 was very little less than the entire pig-iron production of the country in 1854.

The stock of unsold pig iron in the hands of producers at the close of 1882 was more than twice as large as the stock which they held at the close of 1881, but the total quantity fell considerably short of 500,000 tons. The following table shows the quantity held at the two dates referred to, classified according to the fuel used:

	1881.	1882.
Fuel.	Net tons.	Net tons.
Bituminous	36,495	35,190
Anthracite	99,351	107,259
Charcoal	84,050	105,239
Total	210,806	200,629

The stock of anthracite pig iron on hand at the close of 1882 was very little larger than that held at the close of 1881, but that of charcoal pig iron was almost twice as large, and that of bituminous pig iron was over four times as large. The stock of neither anthracite nor bituminous pig iron, however, could be deemed important, but that of charcoal pig iron was certainly disproportionately large. The stock of bituminous pig iron in the producers' hands at the close of 1882 was but 6 per cent. of the year's production of that kind of iron, and the stock of anthracite pig iron was only 5 per cent. of the year's make, while of the total quantity of charcoal pig iron made in 1882 nearly 24 per cent. remained unsold in the hands of the producers at the close of the year.

The condition of the furnaces of the United States on the 1st of last January, according to the association's returns, is shown in the following table, compared with their condition on January 1, 1882:

Date.	Completed furnaces.	In blast.	Out of blast.
Jan. 1, 1881.	687	417	270
Jan. 1, 1882.	701	446	255

The decrease in the past year in the number of completed furnaces is evidently owing to the dropping of several furnaces, which are now regarded as abandoned or which have been torn down. The furnaces in various parts of the country now being erected and of which we have knowledge will soon run the number of completed furnaces over 700 again.

It is possible, from the figures we now have in our possession, to approximately ascertain the consumption of pig iron in the United States in 1882. Our imports amounted to about 540,000 gross tons, and the producers of pig iron had 188,300 tons on hand unsold at the beginning of 1882, and these quantities, added to the production of the year, make the total supply of pig iron 5,351,623 tons, from which 383,055 tons, the stock on hand unsold at the close of the year, should be deducted, leaving 4,967,968 gross tons as the probable consumption. The stocks in

United States bonded warehouses are so small that they need not be considered. In 1881 the probable consumption was slightly greater, having been 4,982,565 gross tons. The consumption in 1880 was only 3,990,415 gross tons.

### The Decline in Lead.

The lead market has given, from the very commencement of the year, such evident signs of growing weakness that a retrospective glance at production in the United States in 1882 seems to us of interest. It is now ascertained that production in the various localities has been distributed about as follows: Nevada, Utah, Colorado, Nebraska, Illinois, Pennsylvania and New Jersey, 90,000 tons; California and New York, 6000 tons; Missouri and Kansas, 28,000 tons; together, 124,000 tons of 2240 pounds. During the past few years the increase of production has been at the rate of 15,000 to 20,000 tons per annum, yet consumption in this country has been so enormous that this rapidly swelling output has been successfully met, and from the highest point which domestic lead commanded in February, 1882, it fell no lower than 4½ cents in November. New York City, Brooklyn and Philadelphia have taken unusually large amounts, due in a great

measure to the activity in the building trade; but all over the country similar causes have been at work. Whether this activity will continue in an equal degree this year is highly problematical; the general impression seems to be that we are on the eve of a slackening of enterprise in this respect; that, though general prosperity may be maintained, we shall witness a process of contraction in many undertakings from an instinctive conservative feeling. Should this more prudent course be adopted by the country at large, it would rather be a subject for congratulation than otherwise, for if we had gone on at the same rate as in 1882 and 1881, and perhaps even capped the climax with a "boom" next October, we might have terminated the current year with a panic. Lead producers, however, are so situated that they require a continued enormous expansion of lead consumption to cope with their colossal output. If this fails them, the difficulty of finding a home market for their entire output, or at least approximately so, will place them under the necessity of exporting at very low figures, as will be seen by the London prices given below, as compared with the years since 1878.

HIGHEST AND LOWEST PRICES OF SOFT PIG.  
1882. 1881. 1880. 1879. 1878.  
£14. 5/- £15. 5/- £19. £19. 10/- £19.  
£13. 5/- £14. 5/- £14. 5/- £13. 5/- £14. 10/-

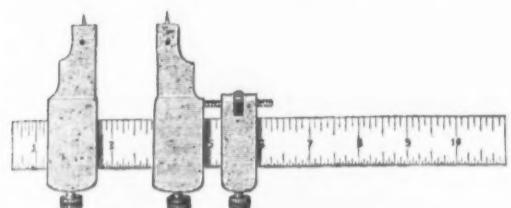
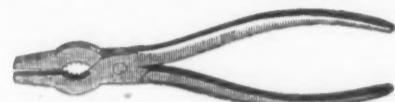
The depreciation abroad, the result of over-production, has now lasted five years, and may become worse should we be compelled to throw large amounts on foreign markets. Yet this is one of the possibilities of the future. Desilverizing out West seems to have been very profitable. The 11 works so engaged last year turned out 100,000 tons of lead of 2240 pounds, besides \$20,000,000 worth of gold and silver, so that, between the base and the precious metals, they actually produced a joint value of something like \$30,000,000. They will certainly not slacken their output, not being dependent on lead alone. If they cannot average the price obtained for the latter last year, they will be resigned to part with it for what it will bring in the readiest market. Accounts from Utah, Colorado and Nevada are most promising as regards a large production this year; they are equally so from Montana, New Mexico and Idaho. From the latter we hear that there are a number of mines of promise in the Wood River district and others. The ores are for the most part galena, and will therefore tell heavily when smelting operations have once been started and better transportation facilities are afforded.

Although lead speculation for a rise has, from experience gained during the past 30 years, earned the reputation of being a poor and precarious business, it was indulged in repeatedly in 1882, and this artificial bolstering up of the prices stepped in on two or more occasions to effectively support the market when the legitimate demand flagged. This year such a game may prove decidedly dangerous, and the usual operators may shrink from it. Left to itself, lead may sink to a lower level than it did in 1882, and this may stimulate consumption to a greater extent than is generally supposed. The sooner it reaches that level, whatever it may be, the better, and the steeper the prices remain afterward the better it will undoubtedly be for the consumer.

### The Iron Situation in the West.

As will be seen by our market reports, the situation in the iron trade in the West, so far as prices and demand are concerned, is not at all pleasant for manufacturers to contemplate. Prices are certainly lower than they have been at any time since the panic, while cost of production is higher than it was at the time of low prices prevalent after 1873. Pig, coal, puddling, muck, rolling—in fact, all material and wages are higher. This is undoubtedly due to several causes. In the first place, to a widespread belief that prices will not be higher during the year than those ruling for some weeks past. Whether this belief is well founded or not, there is no doubt that it



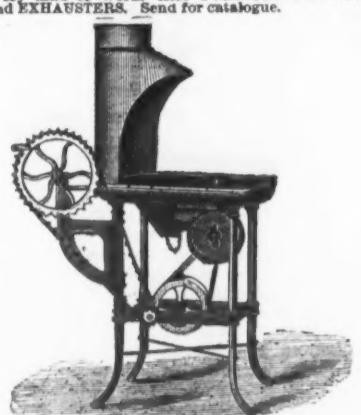
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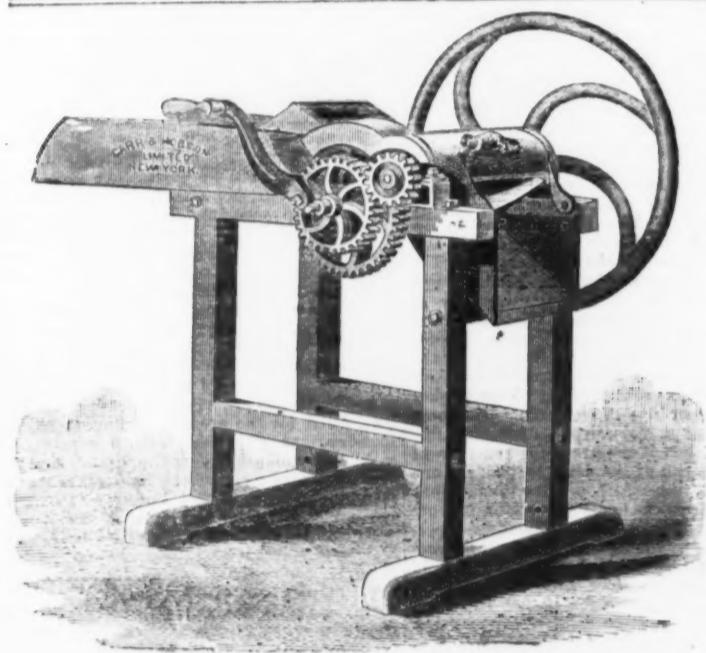
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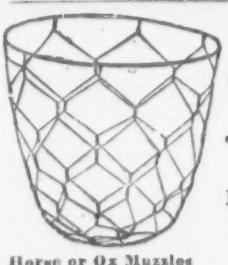
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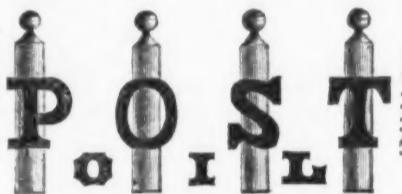
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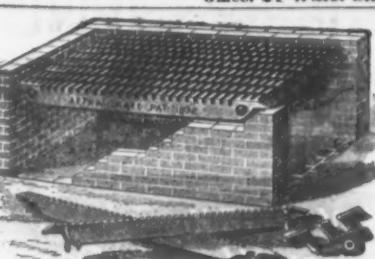
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## WASHINGTON LETTER.

(From Our Own Correspondent.)

WASHINGTON, D. C., Feb. 14, 1882.

### BRIGHTER PROSPECTS OF THE TARIFF.

There is now little doubt that the Senate will dispose of its tariff amendment by to-morrow or Friday. The question will then be in shape to force to an issue one way or the other. The only apprehension is that some stickler over the prerogatives of the House may claim that the Senate has exceeded its powers in originating a revenue bill. The answer to this is that the tariff feature is simply an amendment to the Internal Revenue bill, a measure which originated in the House, and therefore is not an initial proposition. As soon as the House Internal Revenue bill, including the Senate amendment, reaches the House, an effort will be made to take the bill up, and a motion will doubtless be made to concur in the Senate amendment. This will at once put the question on the point of settlement. Should the House insist on its own bill going through, it would complicate matters seriously. A motion might be made to substitute the Senate amendment for the House bill. This would also force an issue. The easiest way out of the dilemma would be the non-concurrence of the House and the appointment of a conference committee. The House bill might then be temporarily laid aside to await action on the other measure.

### THE PROPOSED CONFERENCE.

Some parties are making a great deal of fuss over the probable formation of the conference committee on the tariff bill. This is entirely unnecessary, as it has always been the custom of either House to select two from the majority and one from the minority. It has also further been customary to make the Senator or Representative in charge of the bill on the floor, the chairman of the respective committees of conference. Now, this being the custom, the chances are that Mr. Morrill, chairman of the Committee on Finance, and Mr. Sherman, Republicans, and Mr. Beck, the Democrat, all of the Senate Committee, will represent the Senate, and Mr. Kelley, chairman of the Committee on Ways and Means, and some other Republican, and Mr. Carlisle, Democrat, will represent the House on their committee. The objection is that the Republicans all favor protection and the Democrats free trade. This may be so, but it is not at all likely that the usages of the two houses will be set aside on this occasion in order to gratify those who are exerting their best efforts to cripple American industry and reduce labor. The only hope these important elements have of relief lies in the very fact that the conference committee, if the questions be thus referred, will consist of a majority of those in favor of protection.

**RESISTANCE FROM FREE TRADERS.**  
The opponents of protection have made a stubborn resistance to the metal schedule at every point. Iron ore, pig, manufactured iron, steel, tin plates, cotton ties, and, indeed, everything as it came along, was the target of assault. The Southern Representatives followed up their tactics by attacking cotton ties and uselessly prolonging the discussion on this perplexing topic.

### PLAIN TALK FROM SOUTHERN SOURCES.

After the Southern members had very freely relieved themselves of their free-trade views, Mr. Moore, a Republican Representative from the Memphis district, Tennessee, paid his compliments to the Representatives from that region in a very emphatic manner. He said: "For nearly two weeks we have been trying to enact a new tariff bill, a bill looking to a general revision of the existing law, a revision urgently demanded by every industrial interest in every part of our common country. In the face of the substantially universal treaty for action by this House, the majority have been compelled to sit here from day to day and from hour to hour and listen to one continuous and wishy-washy flood of often frivolous, seldom entertaining, never edifying, but sometimes absolutely silly, political slush and Bourbon flip-flop, intended, no matter what the ostensible pretext, to prevent the passage of any tariff measure during the present session."

### A SOUTHERN PETITION.

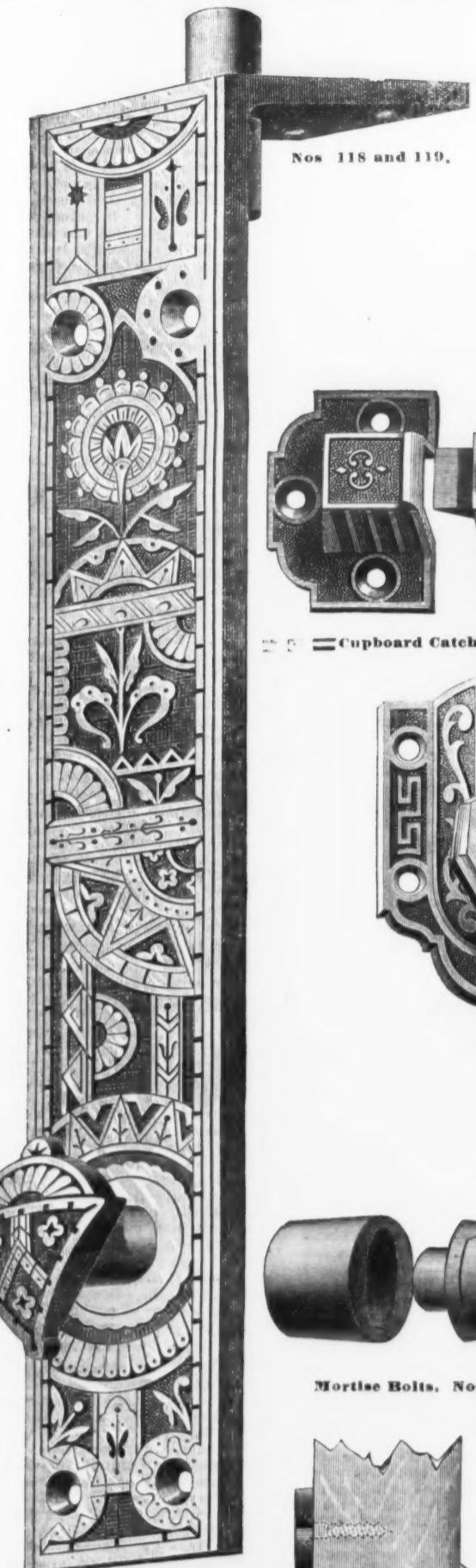
Mr. Moore then presented a petition from a long list of iron manufacturers of Alabama, and representing the following companies: Coosa Furnace Co., A. J. Crawford, president; May Pratt Furnace, Dr. Bardeleben & Underwood; Birmingham Rolling Mill Co., James G. Caldwell, president; Round Mountain Iron Works, R. P. Sibley, lessee; Sloss Furnace Co., J. W. Sloss, president; Tecumseh Iron Co., Willard Warner, president; Woodstock Iron Co., George Noble; Clifton Iron Co., George Noble; Edwards Iron Co., Giles Edwards, president; Shelby Iron Co., J. F. Black, superintendent; Alice Furnace Co., T. T. Hillman, president; Bass Furnace Co., H. C. Eagle, manager.

The views of the interests named were submitted in a memorial to the following effect: That we have vital interests in the pending tariff legislation; that our distance from markets for our products neutralizes the advantages we may have of cheaper production; that we need the tariff to secure the American market to American producers; that with English wages we could defy England, but that paying, as we do, double her wages, we cannot compete with her, even in the markets of our own State; that we earnestly urge the passage of a tariff bill this session—not less protective than the Commission bill—and that we shall seriously deprecate any attempt to defeat the will of a majority of Congress by factious opposition; that the whole sum paid as dividends on capital invested in making pig iron in Alabama and Georgia has not amounted to 5 per cent. of the capital sunk and lost in the same business during the past 15 years; that we pointedly dissent from the recently published statement of an official of an Alabama iron company, that iron is being made in Alabama for \$9.50 per ton, as different from our experience with equal facilities by from 30 to 50 per cent., even for the cheaper grades of iron; that it is our opinion, based on 10 years' experience in the manufacture of pig iron in Alabama, that the cost of making it will in the future increase rather than diminish.

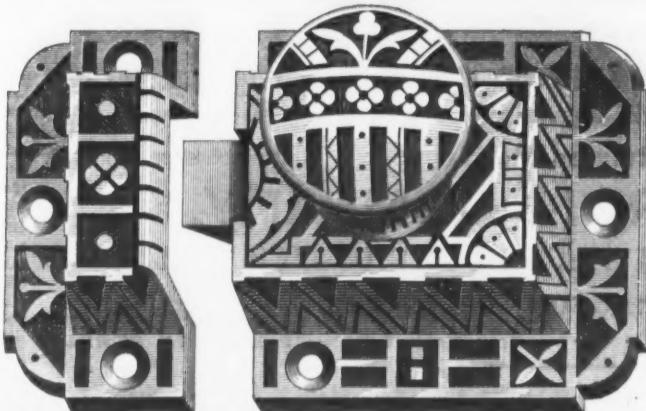
### PROGRESS OF THE DISCUSSION.

The progress of the House on the metal schedule has been slow and tedious, and some important changes have been made. For instance, on boiler or other plate iron, sheared or unsheared, skelp iron, sheet iron, common or black, not thinner than No. 20 wire gauge, the rate was reduced from 1 3-10 to 1 2-10 cents per pound, and on other kinds of the same iron the same proportionate reduction. On tin plates, terne plates and

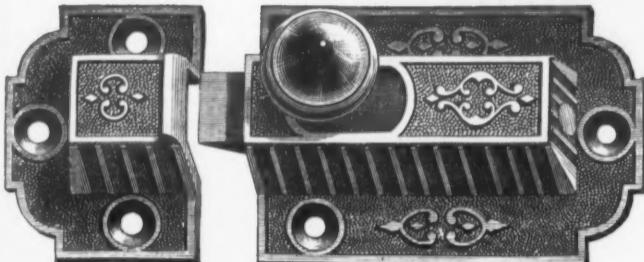
# SARGENT'S HARDWARE



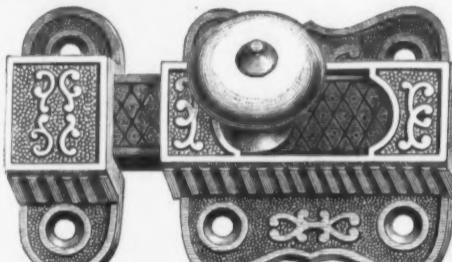
Nos. 118 and 119.



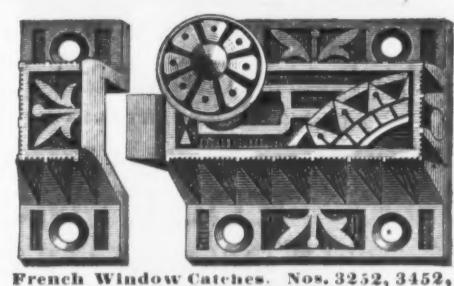
Cupboard Turns. Nos. 4850 and 4950.



Cupboard Catches. Nos. 272, 472 and 872.



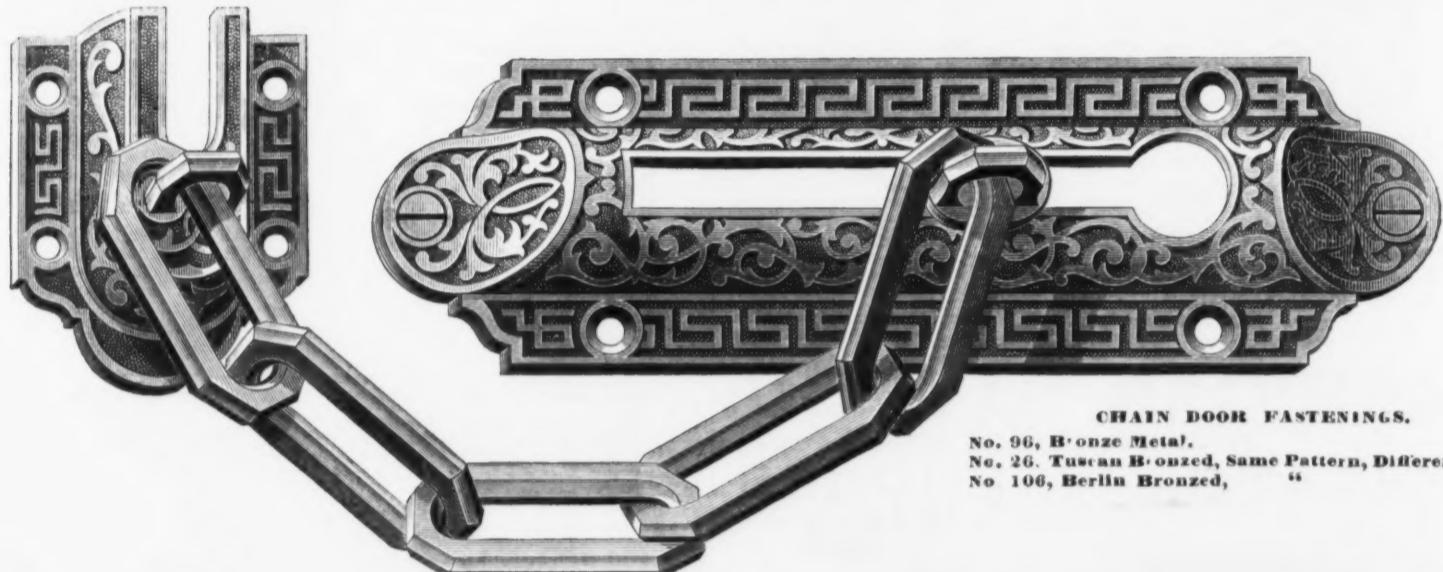
Cupboard Bolts. Nos. 224 and 225.



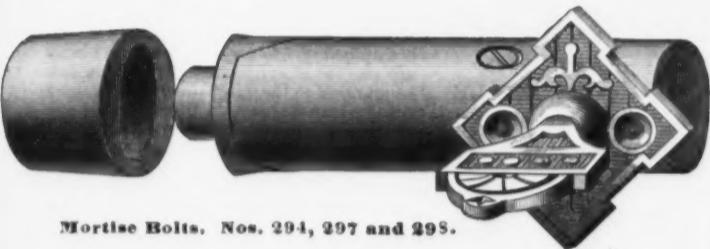
French Window Catches. Nos. 3252, 3452, 3852 and 3952.



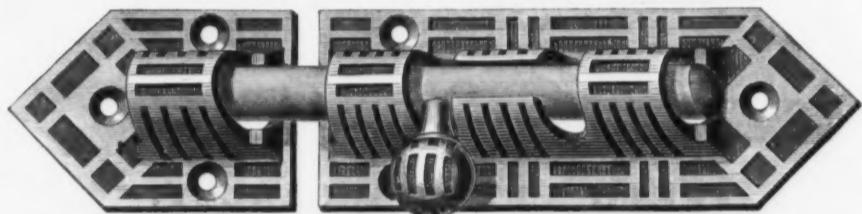
Door Buttons. Nos. 32 and 33.



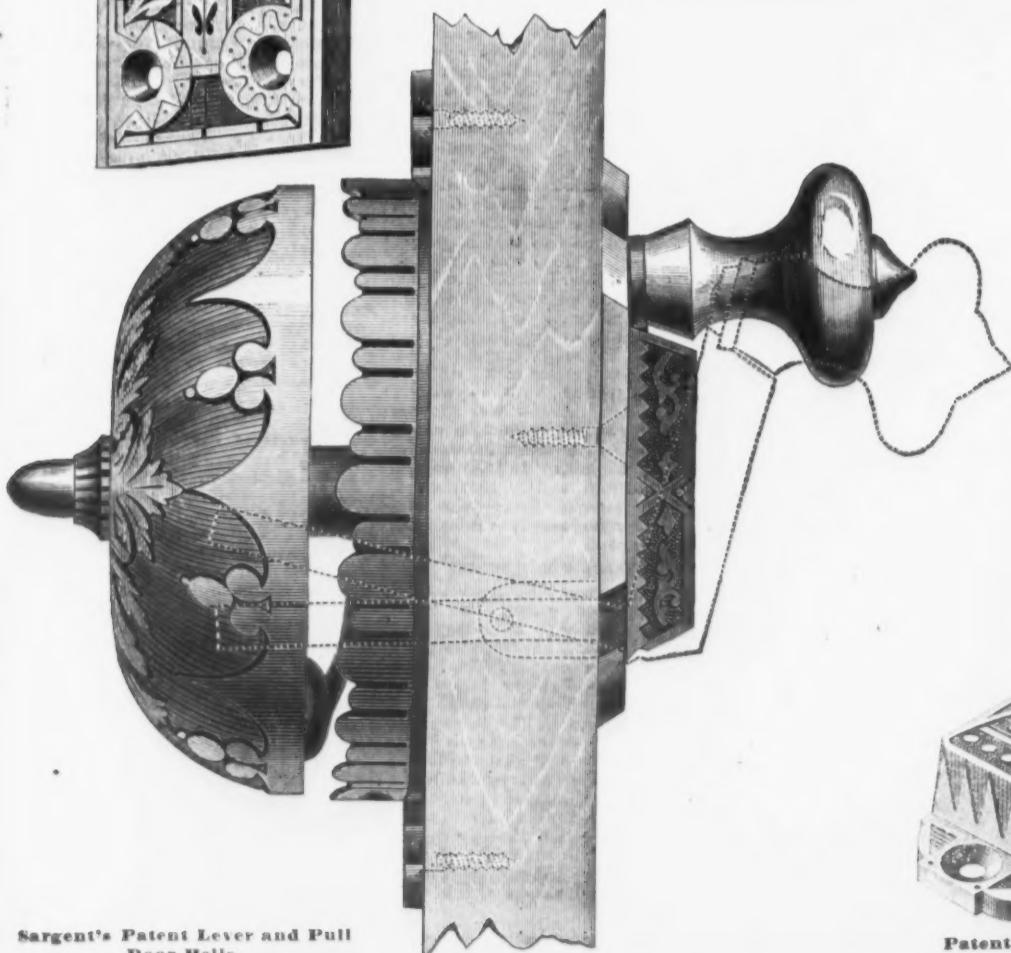
CHAIN DOOR FASTENINGS.  
No. 96, Bronze Metal.  
No. 26, Tuscan Bronzed, Same Pattern, Different Chain.  
No. 106, Berlin Bronzed,  
" "



Mortise Bolts. Nos. 294, 297 and 298.



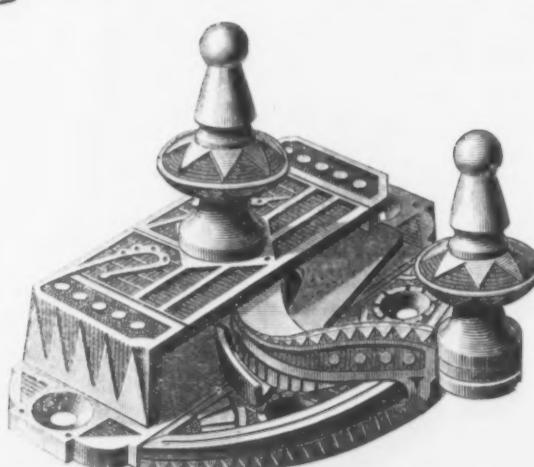
Barrel Bolts. Nos. 261 1-2, 461 1-2, 861 1-2 and 961 1-2.



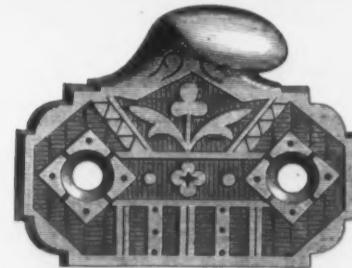
Sargent's Patent Lever and Pull Door Bell.

Shutter Knobs.  
Nos. 84 and 88.

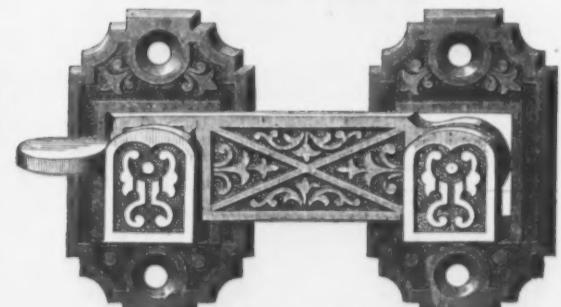
Drawer Pulls. Nos. 501, 505, 506 and 507.



Patent Burglar Proof Sash Fastener. No. 578.



Sash Lifts. Nos. 842 and 942.



Shutter Bars. Nos. 134, 135 and 137.

**SARGENT & Co. HARDWARE MANUFACTURERS.** NEW YORK AND NEW HAVEN, CONN.

## THE IRON AGE.



## THE "SIMONDS" SAWS,

INCLUDING

CIRCULAR, GANG, MULAY, DRAG AND CROSS-CUT,

Are manufactured under a new system—covered by many patents—which produces a result hitherto unequalled.

## THE "SIMONDS" KNIVES,

INCLUDING

Planer Knives, Paper-Cutting Knives, Shingle, Stave and Jointer Knives, and Every description of Pattern Knives,

Are warranted of a superior quality.

Communications or orders for Saws, for Knives, or for Repairing will receive proper attention if addressed to

SIMONDS MANUFACTURING CO., Fitchburg, Mass.,  
Or, Corner Canal and Washington Sts., Chicago, Ill.

## KIESER'S MEAT CUTTERS.

Double,

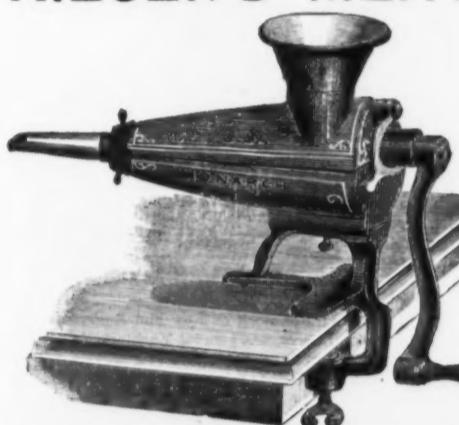
Shearing Cut

Cast Steel

## KNIVES.

Will Thoroughly Cut

## BEEF OR PORK.



"Monarch" Cutter and Stuffer.

EASILY WORKED  
AND CLEANED.  
THE ONLY PRACTICAL  
MEAT CUTTER MADE.  
ALSO THE  
MONARCH CUTTER &  
STUFFER.

No. 55. WITH

FLY AND CEARED WHEELS FOR BUTCHERS' USE.  
Every Cutter Warranted.

KIMBALL SHOVEL CO., Sole Patentees and Manuf'r's, Baltimore, Md.

THE PUSEY & JONES COMPANY,  
WILMINGTON, DELAWARE,

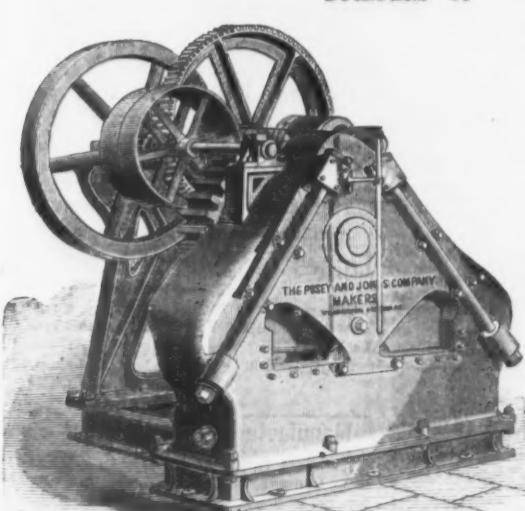
BUILDERS OF

STEAM ENGINES,  
Boilers, Tanks,  
MACHINERY FOR ROLL-  
ING MILLS,  
Punches, Shears,

Machines for Cutting off and  
Slitting old Railroad Rails previous  
to being piled in Rolling  
Mills,

Steam Riveting Machines,

Applicable to Bridge Builders' Work.

RIGHT AND LEFT ANGLE  
IRON CUTTERS,Hydraulic Bending  
Machines,AND HEAVY MACHINERY  
GENERALLY.

S. CHENEY &amp; SON,

MANLIUS, N. Y.

MANUFACTURERS OF LIGHT AND MEDIUM WEIGHT

GRAY IRON CASTINGS.

METAL PATTERN MAKERS AND JAPANNERS.

Correspondence solicited.

taggers tin the rate was reduced to 1 cent. Hoop, band or scroll iron remained the same.

## THE LABOR QUESTION.

The Senate Committee on Education and Labor, as opportunity offers, are still making their investigation into the causes of strikes and the relations of labor and capital. Representatives of the Knights of Labor have been before them and have very fully covered the causes of complaints among workingmen. They very fully presented the different classes of work in iron mills and the wages paid for the same. They claimed that men in iron mills were better paid than those working in coal mines, and then proceeded to demonstrate that such was the fact. The wages of the latter averaged \$350 a year, out of which they were obliged to pay for powder, oil, lamps, &c. They also denounced the "pluck me" store system. In regard to the latter they asserted that the Pennsylvania law prohibiting such stores was inoperative. They complimented the Rochdale system of England, which involved the co-operative plan. There a certain per cent. of the profits was divided quarterly among the patrons of the store not stockholders. There are stores of this kind in the United States which have been very successful. The representatives of this organization said that some legislation should be had to prohibit speculation in the necessities of life. They also asked the application of the eight-hour system of the Government to the workmen in private establishments.

Mr. Blair's committee have accumulated quite an amount of testimony bearing upon the questions of strike and labor, and will continue to hear responsible parties upon the same subjects. There is no intention, however, to make any report during the present session of Congress. It is believed that the investigation will be considerably extended during the summer adjournment, so as to be able to formulate some kind of a proposition looking to the adjustment of the differences between capital and labor.

## TRADES UNION BILL.

Senator Blair, from the Senate Committee on Education and Labor, has reported a bill granting acts of incorporation to national trades unions. It provides that any organization of the character named, having two or more branches in the States or Territories, shall be entitled to receive from the United States courts charters as national associations, under such name as they may designate. They have the power to sue and may be sued, and are granted certain other powers necessary to the carrying out of the object of their creation. This measure is simply preliminary to more elaborate legislation on the subject of strikes. The Trades Union bill is not regarded as part of the principal investigation of the committee, but is a step toward bringing trades unions under the jurisdiction, regulation and control of some responsible authority.

## THE KENNEDY CASE.

The case of John F. Hartranft, Collector, vs. L. P. Kennedy, trading as Kennedy & Brother, entered on the docket of the Supreme Court of the United States February 3, 1882, still remains untouched. In the regular order of business of the court it cannot be reached in its present place for two years. It was supposed that request for its advancement on the docket would be made at the opening of the sessions of the court, but, nothing having been said on the subject, it still remains where it stood when first entered. The case is one of duties on hoop iron in cotton ties, and it was presumed that the urgency of the principle involved would cause the Attorney General to make the request for advancement. There is no probability of the case being taken up at this term of the court. It is thought that the case may have been abandoned by the parties, although there is no record of it here.

## THE TESTS OF IRON AND STEEL.

Representative Campbell, chairman of the Committee on Manufactures, says that he has abandoned all expectation of the passage at this session of the bill providing for the creation of a commission to make certain tests of the strength of structural materials, the tariff question having already consumed the major portion of the session, and the paramount importance of the appropriation bill will preclude all possibility of action between this and the 4th day of March. The bill, as is known, was reported favorably and placed on the calendar. On a motion to suspend the rules in order to take it from the calendar, the motion came within a few votes of obtaining the necessary two-thirds. If all the friends of the measure had then been present the bill would have passed. Now it cannot be until the next Congress. General Campbell has been re-elected, and therefore, as a member of the Forty-eighth Congress, will reintroduce the bill and insist upon immediate consideration by the Committee on Manufactures and by the House of Representatives.

## Fluctuations in Price of Tin Plate.

Messrs. H. T. Lockwood & Brother, of this city, have published a chart which covers the history of tin plate prices from 1869 to the close of 1882. Very little change occurred in tin-plate prices from January, 1869, to the fall of 1871. Here, however, ends the even tenor of the course, and precipitous lines begin to describe a mountain peak, the occasion being the sudden rise in prices which occurred in the fall of 1871 and the spring of 1872. The fall of 1872 saw a decline, while the spring of 1873 saw another rise. The autumn of the latter year brought another decline, and then, with varying rises and falls of no special importance, but with a gradual tendency downward, the lowest point prior to the boom, yet fresh in memory, was reached in the fall of 1875. A little activity in the trade early in 1876 gives the lines of the diagram some little irregularity before the great rise occurs which commenced in the fall of that year. The boom culminated in February of 1880, from which point there was a rapid fall, what we may call the normal level being reached in June of that year. Since that date there have been no great fluctuations in prices. From the chart before us we learn that the lowest price of tin plate in the period named was \$4.62 per box, being the rates for "B V" grade of coke plates in September 1878.

The highest price was reached in April and May, 1872, when "Melyn" grade sold at \$13.75 per box. The study of charts of this kind, although it has no practical bearing upon present business, is always of interest. Such diagrams upon the walls of an office, therefore, are quite appropriate.

## William E. Dodge.

At a meeting of the Iron and Metal Exchange Co., Limited, held February 13th, President J. B. Brinsmade in the chair, the following resolution of respect for the memory of the late William E. Dodge was adopted:

*Resolved*, That the Board of Directors be requested to enter in full on the records of the Exchange the following minute: While the poor, the afflicted and others who need a helping hand are to-day grieving over the loss of Mr. William E. Dodge, their friend and helper, and while philanthropists are saddened because one who was their leader or their ever-ready condutor has ceased from his labors and gone to his long rest, it is meet that we, the representatives of the trades in which the greater part of Mr. Dodge's business career was employed, should make some sign whereby our estimate of the man may be made an enduring record. Therefore we, the members of the Iron and Metal Exchange, do express the unanimous sentiment that our departed friend was throughout his long and successful business career a man without reproach. His life presents an example worthy of imitation, and in his death the trade has lost one of its most distinguished ornaments.

Remarks were made by J. B. Brinsmade, D. Willis James, B. F. Judson, Wm. Houston, and representatives of Bruce & Cook, Thomas Iron Company, Naylor & Co., Hendricks Bros., Lucius Hart & Co., and Bond, Parsons & Co.

## Conditions in the Center of the Scotch Iron Trade.

Mr. Robert P. Porter, in a recent letter to the *Tribune*, from Coatbridge, says:

In the best mills the average weekly earnings of the laborer are from 18/ to 20/. If he is married he pays from £5 to £6 a year for such a house as those described above. If he is single he can obtain board and lodging for about 10/- a week. These lodgings are on what might be called the Box-and-Cox plan—that is, the "night hands" occupy the beds by day, and the "day hands" by night, beds by this process doing double service. Of course, the laborer cannot get much meat, as the prices of provisions are the same as in Glasgow. The men hands earn, some as high as 35/- but I found from the books of one of the largest firms in Coatbridge that the average weekly earnings of an engineer did not exceed 21/-, or 87. Boys and young men make from 8/- to 10/- a week.

The progress in the production of coal and iron in Scotland has been great during the present century, having in the latter case increased from 800 tons in 1800 to the present annual yield of 1,000,000 tons. The iron-producing materials are obtained over a comparatively small area, chiefly within and bordering on the valleys of the Clyde and Forth, and they are principally found in Lanarkshire (in which Coatbridge is located), Ayrshire being second in this respect. The other counties comprised within the coal and ironstone yielding area are Renfrewshire and Dumbartonshire in the vale of the Clyde, and Stirlingshire, Fife, Clackmannan, Kinross, East Lothian, Mid-lothian and Linlithgowshire, or West Lothian, in the vale of the Forth. The blast furnaces of Scotland are, with one exception, all situated within this area. Thus the iron making and producing districts may be said to extend from the Frith of the Forth, a little to the east of Edinburgh, to the opposite point on the west coast and to some distance south of this line, occupying in short that great central valley, consisting for the most part of the upper paleo-gneiss strata, and bounded by the northern highlands and southern uplands of the older paleo-gneiss or primary formations. This mineral district affords employment to about 80,000 persons in raising coal, ironstone and lime alone. It is about 80 miles in length, 40 miles in extreme breadth and 1500 yards deep. It is best developed in the vicinity of Coatbridge. According to the Royal Commissioners' report of 1871 (and I have no later statistics at hand), there was then contained over 2,000,000,000 tons of coals in Lanarkshire alone, and in the valley of the Clyde 900,000,000 tons within 1000 feet of the surface. The pits through which the minerals are raised vary from 30 to 180 fathoms in depth. The Government Inspector of Mines, Mr. Moore, makes the following annual estimate in respect to coal:

Rents paid to proprietors.....	\$2,000,000
Wages.....	10,000,000
Sales.....	15,000,000
Capital sunk in collieries.....	17,000,000

In 1875 the total minerals raised in the Scottish coal fields amounted to 21,778,450 tons, consisting of coal, ironstone, limestone and oil shale. It is this mineral wealth that has made the west of Scotland of such commercial importance. It is at the basis of the great iron shipbuilding interests of the Clyde, and the cheap fuel has also attracted other industries, such as the large textile factories and chemical works which cluster round Glasgow and play such an important part in the trade of Scotland.

The history of the manufacture of iron in Scotland, when compared with that of the Forest of Dean, in England, is comparatively modern, and may perhaps be dated from 1760, when the celebrated Carron Iron Works were erected. This was the first place in Scotland where malleable iron was made. One of the principles of this company—and, I must confess, my experience leads me to add, of nearly all manufacturing firms in Scotland—is to keep the outside world ignorant of much of those internal economies which have been productive of so much commercial success. It is the most difficult task to obtain even trustworthy statements of the number employed and the wages paid, and almost impossible to find out anything of the technical operations. It was the Carron Iron

Works that refused to admit the poet Burns, and upon returning to the inn at Carron he immortalized the works by writing the following verses on the window of the room into which he was shown:

We came na here to view your works  
In hopes to be mair wise;  
But only, least we gang to hell,  
It may be nae surprise.

But when we tirl'd at your door,  
Your porter dought na hear us;  
So may, should we to hell's yeets come,  
Your billy, Satan, sair us.

## The Bay State Iron Company.

BOSTON, Feb. 12.—The suspension of the Bay State Iron Company, with liabilities of \$750,000, whose factories are in South Boston and in Port Henry, N. Y., was made public late this afternoon. Though the failure is partly due to the general dullness in the iron trade and the agitation of the question of changes in the tariff, its immediate cause is understood to be the refusal of banks in this city to make further loans of money on Western railroad bonds upon which the company have been borrowing. The banks refuse further loans on these bonds in view of recent decisions in some of the Western courts, giving the precedence as liens on the road to the bonds held by the States over those held by persons or corporations. Iron paper, however, of all kinds, has been somewhat unacceptable of late, and has been more closely scrutinized than paper from other firms, on account of the unsettled state of the iron market. When the banks decided not to further loan money to the company on their Western bonds, the officers of the Bay State Company called on their stockholders to help them over the present difficulties, but the latter did not care to risk more money, and suspension was the result. J. Avery Richards, the treasurer, is preparing a statement of the company's affairs, which is to be submitted to the stockholders to be held to-morrow. The last official statement of the officers showed liabilities of over \$650,000, while their quick assets in accounts receivable and stock amounted only to \$450,000, but the plant is valued at \$100,000. Mr. Richards states that he thinks the company will eventually be able to meet all their liabilities in full. It is said that several of the stockholders are disposed to close up and sell out the business, and that one of the largest concerns in the iron business is disposed to take the works, or make some arrangement and buy them of their present owners and run them in the same line of business as at present. It is hoped that the stoppage of the works will be for a short time only, if they are stopped at all.

The directors have made an assignment of all the property of the company in the State of New York, which is not protected from attachment by the insolvent laws of Massachusetts, to a trustee for the equal benefit of all creditors without preferences. Of the liabilities, \$260,000 are secured by a mortgage on the company's plant at South Boston and at Port Henry.

BOSTON, Feb. 13.—The stockholders of the Bay State Iron Company met this morning, 8100 of the total 8480 shares being represented. Treasurer Richards presented a statement of the company's condition, which shows the total assets to be \$1,377,466; liabilities, \$581,400. Of the entire unsecured debts those held in Boston are about \$90,000, while those held in New York and elsewhere constitute the balance. It was voted that the assignment of all real and personal property of the corporation in the State of New York, and of all debts due to the corporation from persons or corporations in the State of New York, to be made to trustees for the benefit of the creditors, be approved, and that the directors are authorized to wind up the affairs of the company as soon as possible.

The adjournment of the National Association of Stove Manufacturers without any action whatever with regard to prices, even to the extent of passing a perfunctory motion affirming last year's basis, is rather significant. We do not know that it shows anything of importance with regard to the probable future of the market, but it does show, with emphasis, that the association cannot deal with this question of prices as a trade combination. There was probably not one in the whole assembly who cared a rush whether one basis of selling price was adopted or another, inasmuch as every man in the trade would have gone home and sold for the very best prices he could obtain, without reference to whether those prices were above or below the basis fixed by the National Association. We have pointed out in previous issues some of the difficulties which beset this association in its efforts to make itself a trade combination, and we are not in any sense surprised that the more it tries to become a trade combination, the further it is from attaining that result. In a great many ways this meeting has been instructive, and it will probably furnish topics for more or less interesting editorial discussion in future issues.

It seems somebody at the West has faith enough in the old-fashioned U-rail to put money into a company organized for the purpose of manufacturing an improved form. In one form the rail is double, one U sitting on the back of another. The advantage, of course, claimed is that it is a continuous rail; while the top may be of iron. The next improvement that the company propose to put in operation is a U-rail where the upper rail is of the ordinary form and the lower one comes up into it, making a tube in which telegraph wires are to be laid. This is called a "telegraph" rail. The advantages to be gained by this arrangement, of course, are innumerable, and the disadvantages are undiscoverable from the standpoint of the company. We think railroad men will need a great deal of experiment to convince them of the advantages of the new form. There are certainly many great difficulties to be encountered in the way of making the McKinney rails, as they are called, successfully. It is said that the company have bought the La Grange Iron and Steel Co.'s mills, at La Grange, Mo., and intend to commence rolling the new rails very shortly.



**Special Notices.****Notice to Bridge Contractors.**

**SEALED PROPOSALS** will be received until **March 1st, 1883**, by the McKeepsport and Youghiogheny Bridge Co., for the construction of an Iron (Truss or Suspension) Bridge, or a Covered Wooden Highway bridge, across the Youghiogheny River, at McKeepsport, Pa.

Proposals will be received in two ways, viz.: 1. For a bridge of 3 spans, of the following lengths: 220, 220, 215 feet, 2d. For a bridge of 3 spans, of the following lengths: 150, 150, and 65 feet; width of roadway, 22 feet in the clear; 2d. sidewalks, each 5 feet wide in the clear, and furnished with hand-rails. The roadway is to be furnished with 4 lines of steel street railway rails, each to weigh 45 pounds to the yard. The bridges must carry a factor of 5 for safety, 80 pounds per square foot of floor surface in roadway and sidewalk, in addition to the dead weight of structure. The doorways are to be so constructed as to admit of a load of 10 tons on two pairs of wheels, one foot apart, 10 feet between centers. Bidders will furnish their own designs and specifications, accompanied with strain sheets and plans of details. Materials and structure will be subject to test. Plans and specifications of substructure can be seen at the office of Hatch & Taylor, Clifl Engineers, McKeepsport, Pa. Bids will be received on superstructure and substructure separately, or combined. The right to reject any proposal is reserved. Bidders must accompany the proposal with a certified check for \$100, conditional on the success of bidder signing the contract and furnishing a satisfactory bond for the completion of the work. Bond will be required in a sum amounting to one-half the contract price.

Communications may be addressed to D. C. HUFF, JAN, Secretary, McKeepsport, Pa.

**AUCTION SALE  
OF VERY VALUABLE  
BLAST FURNACE  
AND  
ROLLING MILL,  
BOTH NOW IN OPERATION.**

Notice is hereby given that by resolution of the Board of Directors of the New York and Ohio Iron and Steel Company, I will offer at public auction on the premises of the city of Irondale, Licking County, Ohio, on the 1st day of March, 1883, at one o'clock P.M. unless previous notice, the Blast Furnace and Rolling Mill and all belonging to the New York and Ohio Iron and Steel Company.

The furnace is a Bessemer, 100-ton, heated separately, with a minimum price of \$25,000, below which no bid will be received. Eighty (80) per cent. of the purchase money can remain on mortgage at 7 per cent., not to exceed two years.

The rolling mill is a 100-ton, with wrought iron jacketed, 7' x 7' nominal, £4.10/ @ £5. f.o.b. shipping ports. The mill has a stock of rolls, and wadding, Heating and Annealing Furnaces, and ample Boilers, Engines, Crushers, hammers, Rolls, &c. Stock house, Brick office. Annual capacity, 15,000 tons iron, sheet iron, wire, &c.

Bessemer furnaces are running and in A1 order. Coal can be had at cost of \$1.50 per ton delivered at works. Shipments facilities unusually good by Ohio River, C. and O. R. R., Scioto Valley R. R., and Iron Road, and by the Ohio & W. R.R.

The right is reserved to withdraw the mill without notice.

FREDERICK J. STONE, President.  
32 Liberty street, New York.

**For Sale.****CAS ENGINES**

CAN NOW BE FURNISHED ON SHORT NOTICE.

Sizes ranging from 1 to 25 H.P.

**SCHLEICHER, SCHUMM & CO.,  
PHILADELPHIA, PA.**

**For Sale.**

No. 6 Sturtevant Blower.  
No. 2 Sturtevant Blower.  
No. 4 Allen Blower.  
1 Steam Piston Blower.  
Power Piston Blowers.

MACHINERY EXCHANGE,  
A. G. Brooks & Winchener, 26 N. 3d St., Phila.

**For Sale, Cheap.**

New Patent Bolt-Heading Machine, made by Greenwood & Bailey, Leeds, England.  
Also valuable lot of Gun Machinery, used by the United States Government.

Send for description of above to JOSEPH LUMLEY,  
144 North 3d st., Philadelphia.

**FOR SALE.**

An old well-established Hardware Business in one of the manufacturing towns of Central Pennsylvania. Stock in good shape and will invoice about \$14,000, but can be reduced to suit purchaser; the best location in town on Main Street in the place, and rare chance for a paying investment. Address P. O. BOX No. 1, Millersburg, Pa.

**Special Notice.**

79 Reade st., NEW YORK, Dec. 28th, 1882.  
Notice is hereby given to all persons, parties or companies manufacturing, buying, selling or using Pick Axes or other Tools branded "Washoe," without legal authority from the undersigned, or his only authorized agent, V. G. Hundley, 79 Reade st., New York, that they will be held legally responsible for so doing by the undersigned, who is the sole owner and proprietor of the said brand, "Washoe."

HENRY H. TRENOR.

**To Lease.**

The Machinery Complete of a Plate and Sheet Mill.

Machinery modern, ready to set up, and in good order. Address THOS. R. MCKILLIP,  
130 Dearborn St., Chicago, Ill.

**Wanted.**

A second hand modern Steam Hammer, 5000 to 6000 pounds blow. Address, state lowest price and name of maker.

EDWARD SAMUEL & CO.,  
330 Walnut st., Philadelphia.

**IRON AND METAL  
Exchange Memberships**

Bought and Sold by WM. WILLIS MERRILL,  
4 Stone Street, Room 69,  
Dealer in EXCHANGE MEMBERSHIPS.

**Trade Report.****BRITISH IRON AND METAL MARKETS.**

[Special Cable Dispatch to The Iron Age.]

LONDON, WEDNESDAY, Feb. 14, 1883.

**Scotch Pig.**—There is an active market, and prices are steady. A large business has been done during the week. Makers' prices are quoted as follows:

Lanarkshire, alongside, Glasgow ..... 66/-  
Cottness, ..... 65/6  
Gartsherrie, ..... 65/6  
Summerlee, ..... 62/6  
Carbroe, ..... 55/-  
Glenarnock, Ardrossan ..... 55/-  
Eglinton, ..... 55/-  
Dalmellington, ..... 55/-  
Shotts, at Leith ..... 55/-

Lighwater from Ardrossan to Glasgow is 1/- ton.

**Cleveland Pig.**—The market is dull, and prices continue to decline. Business during the week has been light. We quote makers' prices, f.o.b. shipping port:

Middlesboro' No. 1 Foundry ..... 4/-  
No. 2 ..... 4/-  
No. 4 Forge ..... 4/- @ 4/-

**Bessemer Pig.**—The market is quiet and prices steady, with fair business doing. Inquiries are to hand for mixed lots Nos. 1, 2 and 3, for United States delivery during the year. We quote W. C. Hematites, lots equal parts Nos. 1, 2 and 3, 52/- @ 54/-, f.o.b. shipping ports.

**Blooms.**—There is practically nothing doing in Blooms, and the market is unsteady and prices nominal. We hear of inquiries from the United States for delivery during next three months. We quote Bessemer, 7' x 7' nominally £4.10/ @ £5. f.o.b. shipping ports.

**Manufactured Iron.**—A moderate business has been done during the week. We quote makers' prices, nominally:

	£	s.	d.
Staff Ord. Marked Bars	7	10	0
" Medium "	6	10	0
" Common "	6	9	0
Hoops, 20 W. G. and over.			
" Common Best	7	5	0
" Medium	6	9	0
" Common	6	5	0
Sheets, 20 W. G. and under.			
" Ordinary Best	9	0	0
" Common	8	0	0
Welsh Bars	5	12	0

**Steel Rails.**—There is a marked improvement to note in business, and prices tend upward. Offers are to hand from the United States for Baltimore delivery during next two months. We quote Ordinary Sections, £4.12.6 @ £5.2.6, f.o.b. shipping ports.

**Iron Rails.**—There is but little demand, and quotations are nominal. We quote Welsh, 30 lb and upward, £4.15/ @ £5.10/, f.o.b. shipping ports.

**Old Rails.**—The market is dull and unchanged, with moderate offerings and small sales. We quote Old Tees, c.i.f. New York, £3.15/; and Old D. H.'s, £4 @ £4.2.6, same port.

**Serap.**—Continues dull, with small sales and moderate offerings. We quote Heavy Wrought, c. i. f. New York, at £3.5/ @ £3.15/; Bessemer Crop Ends, run of the mill, are quoted 5/- @ 6/-, f.o.b. shipping ports.

**Copper.**—A moderate business has been done during the week, the market closing quiet, with prices unsteady. We quote Best Selected, £71 @ £72, and Chili Bars, £65.5/ @ £65.10/.

**Tin.**—The market is active, with good business doing, and prices are steady. We quote Straits Tin, spot, £93 @ £93.10/; and futures, £93.15/ @ £94.10/.

**Tin Plates.**—The market is dull. Prices are steady. We quote:

Tin Plates, 10 x 14, 18' qual. Charcoal	22/- @ 23/-
" " ed. " " 23/- @ 23/-	
" " 1st " Coke" ..... 20/- @ 18/-	
" " 1st " " 17/- @ 18/-	
Common Coke	14/-

**Spelter.**—Very little business doing, the market closing dull and prices weak. We quote Ordinary, at shipping ports, £15.10/ @ £15.15/.

**Lead.**—The market is dull and prices weak and lower. Business is moderate. We quote Common English Pig, £13.7.6 @ £13.17.6.

**Freights.**—Steam freights are quoted as follows: Glasgow to New York, irregular, 3 @ 5/6; Liverpool to New York, firmer, 1 @ 3.6.; Liverpool to Philadelphia, tending upward, 3/ @ 5/6.

**FINANCIAL.**

Office of The Iron Age, Wednesday Evening, Feb. 14, 1883.

Despite disastrous floods in the West, the business situation seems more favorable. The clearing house returns of 26 principal cities, for the week under review indicate an enlarged volume of transactions, this increase in New York City being about 10%, and outside of New York about 5%, as against a heavy decrease in some previous weeks. The improvement is most noticeable in the seaboard cities and at several manufacturing points. The foreign trade is especially hopeful, whether reference be had to the latest advices from Europe, or to the enormous volume of the export demand for the current season. The value of exports for December, according to the related returns of the Bureau of Statistics, was close

on to \$93,000,000, which, with one exception, is larger than ever before recorded for a corresponding period in our history, and of this amount over \$41,000,000, or 44%, was cotton. It is further shown that during the last quarter of the year—ever since cotton began to move—the value of both bread-stuffs and provisions combined was only about \$75,000,000, against \$105,000,000 for cotton. The important inference, as well as fact, remains that the country still holds in reserve the great bulk of its cereal products, available to meet the probable imperative future demand from Europe, arising from the "crisis in field work" which now exists, according to the London Times, not only in England, but throughout the Continent, much of the autumn sowing having decayed in the soil. From the Western States reports come of more or less damage to the winter wheat, but nothing can be definitely known until the melting of the ice.

In the dry goods trade our leading jobbers report little animation, but retail buyers are beginning to arrive. Prices are generally firm, and in some instances have slightly advanced.

The most serious drawback in current business is the disastrous floods in the West. In Cincinnati alone "more than a thousand firms and manufacturers are prostrated," as stated by a correspondent, and 30,000 to 40,000 workmen are out of employment, including 3,000 rolling-mill men and iron workers. At Louisville, among the works stopped are Miskel's Plow Factory, Long's Pipe Foundry, the Kentucky Lead Works, the Crucible Steel and Iron Works, and Bridgeford's Stove Foundry. At New Albany, Ind., the damage by water in the Glass Works is estimated at \$100,000.

On the Stock Exchange during the week under review the markets have been moderately active, but unsettled. Floods in the West, troubles among the telegraph companies, and several failures of more or less importance in the iron trade, were the causes of disturbance. On Thursday an improved tone was manifest, partly due to covering on the part of the shorts, and on Friday there was increased strength on the announcement that the elevated railroad difficulties had been adjusted. Manhattan advanced 4 1/2%, and Metropolitan 3%. There was also a premature announcement that negotiations had been concluded for a lease of the Mutual Union to the Western Union Telegraph Company, and the latter advanced from 82 1/2 to 83 1/4. On Monday Mutual Union advanced on the strength of the lease, but Western Union declined to 82 @ 82 1/4. The granger and Vanderbilt stocks were all lower, and Manhattan was lower on the decision of Judge Barrett that the merger of the elevated roads was inoperative and void without the consent of the Metropolitan stockholders. On Tuesday the coal stocks broke down on reports concerning the suspension of iron mills at Boston, but otherwise were without special feature. To-day the market was dull at a fractional decline, the leading stock ranging as follows: Delaware, Lackawanna and Western, 119 1/4 @ 118 1/2; Union Pacific, 93 1/2 @ 92 1/2; Milwaukee and St. Paul, 101 1/2 @ 100 1/2; Western Union Telegraph, 81 1/2 @ 81 1/2; Denver, 44 @ 43 1/2; Central Pacific, 80 5/8 @ 79 1/2; Erie, 36 5/8 @ 36 1/2; Illinois Central, 115 @ 114 1/4; Louisville, 54 1/2 @ 53 1/2; Northwest, 130 1/2 @ 130; Northern Pacific, 47 1/2 @ 46%; do, preferred 82 1/2 @ 82; Oregon and Transcontinental, 84 @ 83; Reading, 54 1/2 @ 53 1/2; Rock Island, 122 1/2 @ 121 1/2; Wabash, 31 1/2 @ 30; Wabash preferred, 51 1/2 @ 50%; Lake Shore, 103 1/2 @ 103 1/2; Burlington and Quincy, 119 1/2 @ 118 1/2; Rochester and Pittsburgh, 19 1/2 @ 18; Jersey Central, 72 1/2 @ 71 1/2; and Missouri Pacific, 102 1/2 @ 101 1/2. Money continues in good supply, and no change is expected before the time for the April settlements. Commercial paper is in good demand. We quote 60 to 90 days' indors'd bills receivable, 5 @ 5 1/2%; four months' acceptances, 5 1/2 @ 6.

Foreign exchange is firm, and notwithstanding the favorable trade balance the supply of commercial bills is moderate, with no present indications of an early renewal of gold imports. Some of the leading bankers this afternoon advanced their posted rates to £4.50 @ £4.83 1/4 for 60 days, and £4.50 @ £4.86 1/4 for demand.

Government bonds were firm, closing as follows:

	Bid.	Asked.
U. S. 5's, 3d, continued at 14	13 1/2	—
" 4 1/2's, 187, registered	13 1/2	13
" 4 1/2's, 187, coupon	13 1/2	13
U. S. 4 1/2's, 187, registered	13 1/2	13
U. S. 4 1/2's, 187, coupon	13 1/2	13
U. S. Currency 6's, 1870	13	13
U. S. Currency 6's, 1871	13	13
U. S. Currency 6's, 1872	13	13
U. S. Currency 6's, 1873	13	13
U. S. Currency 6's, 1874	13	13
U. S. Currency 6's, 1875	13	13

The importations of specie and bullion at this port during the week ending February 9 were \$71,194, consisting of \$22,457 in gold and \$48,737 in silver, as against a total of \$78,200 for the week ending February 10 last year.

The imports since the 1st of January 1—

1882,	132,500
\$124,655	\$23,775
\$75,224	



**Bessemer Iron.**—There is some inquiry, and buyers could be found at \$21.50, but sellers appear to be holding at about a dollar higher. The probabilities are that business will be closed at concessions by both parties.

**Spiegeleisen.**—Market very weak; 20% offered at \$13, and 10% at \$12 at \$27. Buyers not inclined to make offers.

**Muck Bars.**—The demand is very moderate and prices weak. Asking prices are \$37 @ \$37.50, but concessions have been made on large lots.

**Blooms.**—Business has been a little more active, with sales chiefly at the following quotations, viz.: Charcoal Blooms, \$64 @ \$66; Run-out Anthracite, \$56 @ \$58; Scrap Blooms, \$49 @ \$51; Northern Ore Blooms, \$47.50.

**Bar Iron.**—There is not much change to notice. The market has been dull and dragging, with only a small business at about last week's figures. There has been no change in quotations, but prices are very irregular. Buyers who are prepared to place good-sized orders can obtain concessions according to quantity, specification and quality, but for the ordinary run of business 2.3% @ 2.35¢ is obtained for Refined Iron. In other cases all sorts of prices have been named, from 2.2¢ upward for what is claimed to be Refined Iron, and as low as 2¢ for Common. It is a long time since there was such depression as now prevails, but it is generally believed to be of a temporary character, and largely, if not altogether, due to the uncertainty in regard to the tariff. The general outlook is considered to be entirely satisfactory, and there is an almost universal expectation of a healthy spring trade. Stocks have been run down to the lowest point possible, and as a large amount of new business is likely to come on the market at an early date, manufacturers are disposed to regard the present inactivity with some degree of Skelp Iron is quiet at about 2.3¢ for Grooved and 2.5¢ for Sheared.

**Plate and Tank Iron.**—The feeling is something better in this department, although sales have not been of special importance. There is more inquiry, however, and from some directions a certainty that business will be placed on the market at a very early date. Tank Iron and Boat Plate have been inquired for, and manufacturers are generally very firm at 2.5¢ as the usual quotation. The asking price's are as before, viz.: 2.5¢ @ 2.6¢ for Tank and Boat Plate, 3.5¢ for Shell, 4.25¢ @ 4.5¢ for Flange, and 5.5¢ for Fire-Box. A sale of over 100 tons Tank Iron was made to-day at something below 2.5¢.

**Structural Iron.**—There is no change in this department: business is still very dull and dragging, but prospects are improving. It is understood that some large orders will be on the market in course of a few weeks, and there is every reason to expect that the mills will have plenty of work during the spring and summer months. Prices are not very strong, but are generally quoted: 2.5¢ for Angles, 3.25¢ for Tees, 3.5¢ for Beams, and 3.7 for Channels.

**Sheet Iron.**—The market is very dull, and sales in quantity are difficult to make. Competition has been very strong in some quarters, to meet which prices have been shaded considerably, although the best makers have held prices very steady. Small lots may be quoted as follows:

Common Sheets, No. 28.....	4.5¢
Common Sheets, Nos. 26 and 27.....	4.4¢
Common Sheets, No. 22 to 25.....	4¢
Common Sheets, No. 16 to 21.....	3.5¢
Best Refined 2% advance on the above.....	7¢
Best Bloom Sheets, No. 22 to 25.....	6.5¢
Best Bloom Sheets, No. 16 to 21.....	6.5¢
Common Red Plates, 1.5 to 16.....	3.1¢
Blue Annealed, 1.5 to 16.....	3.3¢
Best Bloom, Galvanized, discount.....	3.5¢
Second quality, discount.....	4.5¢

**Boller Tubes.**—Prices are weak, with 5% discount as a nominal quotation. Steam Pipe is badly demoralized, and quoted all the way from 65 to 70% discount from list price.

**Steel Rails.**—The market is dull; prices weak and irregular. Manufacturers quote \$40 at mill, and in a small way are entering orders, but in most cases would be willing to shade a dollar per ton on large lots. Buyers appear to be quite indifferent, however, and at \$39 even there is no great demand. It is a long time since the market had so gloomy an appearance as at present, although it is probable there will be quite an active demand as soon as the tariff is definitely fixed. In the meantime both sides are disposed to wait and take whatever risks there may be in a policy of that kind.

**Crop Ends.**—There has been very little demand of late, although to-day \$21.50 was bid and refused for a lot ex-ship Baltimore. Sellers ask \$22, which is more than consumers are inclined to pay at the moment. A lot of old Steel Rails was sold yesterday at about \$23 on cars at Philadelphia.

**Old Rails.**—The market is very dull, and except for small lots there is very little demand. Double Heads are offered to arrive at \$27.50, and T's on spot, \$26 @ \$26.50, with small lots taken at these figures. Large lots could be had at much lower figures for spring delivery.

**Scrap Iron.**—The market is quiet and unchanged at \$26 @ \$28, according to selection.

**Nails.**—Market very dull at about \$3.40, less the usual trade discount.

#### PITTSBURGH.

(By telegraph to *The Iron Age*.)

PITTSBURGH, PA., Feb. 14, 1883.

The Western Nail Association met in regular monthly session to-day, the mills at Pittsburgh, Wheeling and the valleys only being represented. The old car rate, \$3.40 @ 1/2 kg, with usual discounts, was unanimously reaffirmed. Reports showed that Eastern mills were offering Nails delivered at Western points below this, but it was decided to take no notice of their action. Stocks are light, but demand is not heavy, owing largely to the state of the weather. Merchant Iron is quoted at 2.15¢ @ 2.25¢ in small lots, but larger buyers and well-assorted orders can be placed at less rates, though the low rates that have been quoted are not for Bar Iron, but special lots of extras. The trustees of A. Kloman have to-day called a meeting of their creditors.

Office of *The Iron Age*, 77 Fourth Avenue, Pittsburgh, Pa., Feb. 13, 1883.

There is a wide difference of opinion in regard to the general Iron trade. While it is admitted by all that the business is very unsatisfactory at present, some are hopeful in regard to the immediate future, while others are despondent. The former, with good weather and the tariff question disposed of, look for an early improvement, and these are in the majority; but the latter are disposed to take an opposite view, basing it largely on overproduction, claiming that the country is producing more Iron, both Raw and Finished, than can be consumed. It must be admitted that there has been an overproduction of Pig Iron during the past six or eight months, but this will be regulated by furnaces blowing out; a number have done so already, and others contemplate doing likewise very soon. The production of Finished Iron has also been reduced. Many of the Western mills have within the past few weeks changed from double to single turn, and unless there is a change for the better some will no doubt shut down altogether. There is no question but the uncertainty of the action of Congress in regard to the tariff has had a good deal to do with the unsettled and very unsatisfactory condition of the Iron trade for some time past. One of our most prominent manufacturers, who has just returned from an extended Western trip, reports that country bare of stock, and says that both buyers and consumers, apprehensive of lower prices, are buying only as their immediate necessities require. The feeling, however, in Iron circles is that it would be much better to have the tariff remain as it is than to pass the bill as it now stands.

**Iron.**—There is nothing new to report. This important interest is, as might be expected, very unfavorably affected by the depression in Pig Iron, and the blowing-out of some furnaces is very discouraging to the Ore companies, many of whom begin to think that the dividends for 1883 will be comparatively light. It is stated, unofficially, that the Republic Ore Company have fixed the price for this year at \$5. As yet furnacemen are refusing to make contracts ahead, preferring to take the chances and buy only to supply their immediate wants.

**Pig Iron.**—The situation has not changed perceptibly since the date of our last report. Business has been fair, several good sized lots having been effected, and, while price's continue weak, there has been no further change. Furnacemen generally are of the opinion that the market has touched the lowest point, and this view is also entertained by some consumers, but there are others of the latter who predict a still further decline. The most favorable feature, so far as relates to the producing interests, is the blowing out of furnaces and thereby reducing the production, although the fact that consumers generally have very light stocks is also in favor of the furnacemen. We can report sales in a regular way at \$22.50 @ \$23.50, 4 mos., for No. 1 Foundry; \$21 @ \$21.50, for No. 2; \$19.50 @ \$20.50, 4 mos., for Neutral, and \$21 @ \$22 for All Ore Forge. Sale of 500 tons Neutral Forge at \$20, cash, and 100 tons do. at \$19, cash. The former is a very popular brand in this market.

**Bessemer Iron.**—Is believed to be down to the very bottom: \$22.50, 4 mos., has been the price for two or three weeks past, and there are now but few sellers at the price quoted, although during the week under review there was a sale of 2000 tons at the price in question. Bessemer, it is claimed, is lower relatively than Ordinary Mill. Within the past four or five weeks there have been sales of 20,000 tons reported in the market—\$800 at \$23, 4 mos., and 10,000 and 20,000 at \$22.50, 4 mos.

**Muck Bar.**—Continues very dull, and prices are weak and lower. Good Neutral is now offered at \$35, cash, at mill, and it is rumored that sales have been made as low as \$34.50. It is claimed that Muck has declined more and is lower relatively than Pig Iron.

**Manufactured Iron.**—The general position of the market remains unchanged. Business continues very unsatisfactory and unsettled, but some of our manufacturers look for an early change for the better, and it is to be hoped that their expectations may be fully realized. Prices may be quoted on a basis of 1.90¢ @ 2¢ for Bars, the latter being bed-rock, and only very desirable orders can be placed at it.

**Nails.**—According to agreement, all the Nail factories west of the Allegheny Mountains were started up yesterday; after running three weeks they will be stopped again for two weeks, the object being to prevent an accumulation of stock before the spring trade opens up. Prices remain unchanged at \$3.40, 60 days, 2% off for cash, with usual abatement of 10¢ per kg on carload lots and upward. The prospect for a good spring trade is most encouraging. Wheeling will commence shipping to St. Louis the latter part of the present week.

**Wrought Iron Pipe.**—There is a good deal of business offering, but manufacturers are refusing to contract for large lots at present prices, which, it is claimed, afford little or no margin for profit. Discounts on Gas and Steam Pipe, 70 @ 70 & 5%; on Boiler Tubes, 55% off.

**Steel Rails.**—May be fairly quoted at \$30 @ \$40, cash, at mill; not many buyers at \$40, and sellers are reluctant to sell at \$39.

**Old Rails.**—Your correspondent made a mistake in last week's report in regard to American Tee Rails, by saying that they had been offered at \$25, delivered in Pittsburgh, without finding buyers. They were offered here at the price in question, but it was for future delivery, sellers option. For immediate delivery the lowest sales as yet reported have been at \$26.20 @ \$26.50; a lot of 400 tons was sold here last week at \$26.50. Nothing doing here in Double Heads, and the demand for Tees is light. Old Steel Rails quoted, nominally, at \$23 @ \$24.

**Railway Track Supplies.**—Railway Spikes remain unchanged at 2.80¢ @ 1/2 lb.; Track Bolts, 3.50¢ @ 3.75¢ with square and 3.75¢ @ 3.90¢ with hexagon nuts; Spike Bars, 2.5¢ @ 2.75¢.

**Bessemer Billets.**—Are still quoted at \$43 @ \$45 1/2 ton, according to carbon.

**Scrap.**—The Scrap trade continues dull and prices weak, but without quotable change during the past week. Wrought Scrap, \$25 @ \$26 for Ordinary, and \$27 1/2 net ton for Selected; Wrought Turnings, \$18 @ \$20; Car Axles, \$36 @ \$35; Steel Rail Ends, etc. So far as known, there have been no sales here as yet below \$25 1/2 gross ton; Old Car Wheels, very dull—offered at \$23.50 1/2 gross ton, without finding buyers; Cast Borings, \$14 @ \$14.50.

**Steel.**—The general Merchant Steel trade continues dull and unsettled, being affected unfavorably by the uncertainty in regard to the tariff.

**Coke.**—To use a common phrase, the bottom has dropped out of this important interest, and, what is still worse, there is not much prospect of any immediate improvement. The blowing-out of a number of Pig Iron furnaces has largely reduced consumption, although at the low prices now ruling increased shipments eastward are looked for, as it is expected to take the place, to a considerable extent, of Anthracite Coal. We now quote at \$1.15 per ton, free on cars at ovens, in a regular way, and \$1.30 @ \$1.40 for small foundry orders. It is expected that the production will be materially reduced before long.

#### CHICAGO.

Office of *The Iron Age*, 36 and 38 Clark St., cor. Lake, Chicago, Feb. 12, 1883.

**Hardware.**—The unfavorable condition of the weather during the early portion of the past week caused considerable interruption to business generally. With the opening up of the present week, however, orders are coming in more freely and shipments are made more promptly, while a good tone pervades the market for Shelf and Heavy Hardware, with prices remaining flat.

**Nails.**—Are comparatively firm at \$3 50 1/2 kg for rod to 6cd., with the usual discount of 2% off for cash. Stocks in dealers' hands are fair.

**Manufactured Iron.**—Somewhat of an increased activity is to be noted in this market at present looking over that of the week past, and the outlook for a good spring trade is more encouraging. We quote: Bar Iron, 2.30¢ @ 2.40¢ rates; Angle Iron, 3.10¢ @ 3.30¢ rates; T Iron, 4¢ rates; Beams, 3.80¢ @ 3¢; Channels, 3¢; Tank Iron, 3¢ @ 3.20¢ rates; Sheet Iron, 3.20¢ @ 3.40¢ rates; Norway Original Bars, 4.25¢ rates; Norway Re-rolled Bars, 5.5¢ rates; Ulster, 4.5¢ rates; Low Moor Iron, 8¢ rates; Nuts and Washers, 8¢ off list; Wrought Boat Spikes, 3.4¢ rates.

**Pig Iron.**—We note a fair market and a good demand for Charcoal Pig Iron, while quotations continue unchanged. We quote: Lake Superior Charcoal, Nos. 1 and 2, \$24; No. 3, \$25, and Nos. 4, 5 and 6, \$26.50, 4 months; Calumet, \$24 @ \$25, 4 months; Brian Hill, \$25; Silver Soft, \$23 @ \$24; Crane No. 1, \$27.50; No. 2, \$26.50; Hinckley, \$24.50; Thomas, \$27.50 @ \$28; American Steel, \$24.50 @ \$25; Imported Scotch, \$32; Du Val, No. 1, \$24; No. 2, \$23; Fulton Notch, No. 2, \$22.50; No. 3, \$21.50, and Southern Coke, \$24.50.

**Steel.**—The inquiry for Tool, Machinery and Agricultural Steel has been moderate, and prices, with a few exceptions, are unchanged. We quote as follows: Tool, 12¢; Machinery O. H., 5¢; Crucible Machinery, 7¢; Hammer, 2 inches and under, 8¢; over 2 inches, 9¢; Cast Spring, 6¢, and O. H. Spring, Tire, and Sleigh Shoe, 5¢; Sheet, first, second and third quality, 12¢, 10¢ and 8¢ respectively; Crucible Plow, 6¢; Eagle Plow, 5¢; Iron Center Plow, 9.5¢, and Soft Steel Center Plow, 9.5¢; Cast Plow, 5¢; German Plow, 4.5¢.

**Scrap Iron.**—Market continues dull, with but little inquiry. The following are the purchasing prices paid by dealers: No. 1 Railroad Wrought Scrap, 7¢ net ton; No. 1 Country Wrought Scrap, 7¢ net ton, \$21; No. 1 Cast Scrap, 7¢ ton, \$17; No. 1 Stove Plate Scrap, 7¢ ton, \$12; Machine Shop Wrought Turnings, 7¢ ton, \$10; Cast Iron Borings, \$7.

#### CHATANOOGA.

Office of *The Iron Age*, Market and 8th Sts., CHATANOOGA, Feb. 12, 1883.

The weather during the week has been extremely unfavorable for outdoor work. Mud is fathomless and rain is constant. General movements of heavy material are quite up to amount to the usual trade of the season, while special contracts are being made for large supplies, deliverable during the year. Streams are flush and boating trade is good.

**Pig Iron.**—Production is going forward at the usual rate and increasing somewhat, except in fine Foundry, which the wet weather puts a damper on. This grade of Iron, owing to unfavorable conditions for making it, has become very scarce. There are no stocks at furnaces. Contracts are being freely made for delivery of supplies for several months of the year, at about quotations for smaller lots, and \$1 @ 50¢. \$22 @ \$23; No. 2 Foundry, \$20 @ \$21; Gray Forge, \$18 @ \$17; White and Mottled, \$15 @ \$20; Car-wheel Metal, \$31 @ \$35.

**Ores.**—We quote: 50% Brown Hematite, 7¢ ton, \$2 @ \$2.75; Red Fossil, \$2 @ \$2.25, delivered at furnace.

**Miscellaneous Articles.**—Old rails dull. Scraps are dull. Wrought, \$18 @ \$22; Cast Scrap, \$11 @ \$14; Old Wheels, \$24.

**Nails.**—We quote at \$3.40 strong for large lots at mills, 60 days; 15¢ higher for small bills.

**Manufactured Iron.**—Bar has slightly improved since our last report. We quote at \$2.40. Railroad Spikes, \$2.20; Track Bolts, \$3.75; Fish Plate, \$2.50.

**Coal.**—We quote: Fancy Lump, \$4.50; Common, \$3.50 @ \$4; run of mine to manufacturers, \$2.

**Coke.**—We quote: Furnace Coke, \$3 at point of consumption; Foundry, 10¢ @ 12¢ 1/2 bushel.

**Steel and Iron Rails.**—The Ram Mill is working up a lot of stock into Re-rolled Iron Bars. There will be no more Steel Rails made in the South until our manufacturers secure the use of the basic or some similar process.

#### CLEVELAND.

Messrs. RHODES & CO., of Cleveland, send us the following under date of the 6th inst.:

The chronicler who essays to tell a cheerful tale about the present condition of the Iron market has a difficult and well-nigh impossible task. The market seems to be in a demoralized condition. During the past month the volume of Pig Iron business has been large; a number of contracts involving considerable amounts have been made, but the prices obtained are not such that should cause any elation to the parties who have taken them. We have heard that one buyer, who was covering sales of his manufactured article, bought his Iron for \$3000 less than he had figured he would be able to when he closed his own contracts of sale. The competition for good-sized orders is so keen that prices are made irrespective of present or probable future cost. It seems to be a general *sauve qui peut*.

The reason for this condition of affairs is not because there are large stocks of Pig Iron, for the stock is a mere bagatelle; nor is it because producers are generally in financial straits, for never in the history of the Western Pig Iron industry has their financial standing been as sound as to-day, and money is in good supply at the loaning centers for any legitimate demand. Frequently, with much larger stocks, with many bills payable, with rate of interest higher and money hard to get, have Western producers held their product with a devotion and grit worthy of a better general business outlook than they had. We have said so often that the general outlook now is good that it may seem tiresome to repeat it. In 1881 the crop of all kinds of grain was 2,053,500,000 bushels; in 1882 the crop of all kinds of grain was 2,685,000,000; in 1881

Old Wheels	19.00	65	22.00
Wrought Scrap, No. 1	22.00	65	24.00
Cast Scrap, No. 1	16.00	65	24.00
Richmond Refined Bar Iron	24.10 <sup>00</sup>	base	
Horse Shoes (Tredegar)	4.50 <sup>00</sup>		
Mule	5.50 <sup>00</sup>		

## Our English Letter.

### Review of the British Iron, Steel, Metal and Hardware Trades.

(From Our Regular Correspondent.)

LONDON, ENG., Jan. 29, 1883.

#### THE SITUATION

cannot be said to have undergone any change for the better since my last letter; indeed, I should probably be within the limits of credibility if I said that there has been a positive retrogression in almost all branches of our trade and commerce. Somehow or other things do not seem to move along as they ought. Our French neighbors have another crisis on hand, and are apparently doing their best to magnify the ridiculous escapade of Plon Pion into dimensions which may serve the purpose of a doomed ministry, but cannot do any good to the Republic or to the nation at large. With the new ministry, of which we have telegrams this afternoon, it is hoped the *fiasco* will be permitted to die out. Until the matter shall have been disposed of in some way or other the commercial classes of France will not resume their wonted pursuits with confidence. That they have been terribly scared within the past week or ten days is shown by the fact that enormous amounts of money have been sent here for reinvestment, and, if I am rightly informed, large sums have also been sent to the United States. Then, again, so long as France is in a volcanic condition, so long must Germany be watchful and uneasy, seeing that it is an accepted maxim that some day or other France will seek to recover Alsace and Lorraine from the lately victorious Fatherland. Further East, the relations between Russia and Austria would appear to have become more amicable, the visit of M. de Giers to Vienna being reported to have been conceived on pacific lines. In Turkey trade is slow and small of volume, owing to the notorious impetuosity of the Sultan and the entire nation. Elsewhere we are pretty much as described by me last week. At home our prospects are not specially bright. Gales and floods have been the features of the week, and neither has improved the outlook for the farmers. In the North there have been snow storms and perfect deluges of rain, while on and near our coasts some of the most terrible shipwrecks on record have taken place. The Cimbria disaster has naturally been much commented upon. Pending the inquiry into its causes it would not be fair to enter into details, but I think it is permissible to say now that the wreck, as well as the late sinking of the City of Brussels and other steamers, will cause a lively discussion as to the merits and demerits of iron and steel as shipbuilding materials. Wood has its faults, but it is claimed that no wooden vessel would sink in 10 or 15 minutes after a collision, unless the rent in its "skin" were of truly gigantic dimensions—whereas the piercing of an iron plate seems to settle a metallic ship outright.

#### THE IRON MARKETS

have been lifeless and weaker all round, with scarcely a single exception. The lowering of the bank rate from 5 to 4% on Thursday last came too late to be of much assistance to the business of last week, and I am writing too early this week to judge of the effects of the change, but I suppose it will be of some little assistance to speculators, as well as to struggling merchants and manufacturers. So far this year, however, the spirit of speculation has been quite dormant, hardly an effort in that direction having been noticeable. In the absence of such a stimulus the market has been left dependent on the consumptive demand, and as that has been abnormally light the outcome is as stated. One would suppose that there would be something or other likely to lead speculators to operate, and as they have not done so it is but reasonable to assume that they do not regard the outlook with very sanguine eyes. In this they are not by any means singular, for there appears to be a tacit consensus of opinion that prospects are not brilliant. Some there are who look for an expansion of business next month, but even these do not venture to indulge in cock-sure calculations. They may, possibly, be correct in taking that view, for the simple reason that matters cannot well be worse than they are now, and, by parity of reasoning, when things are at the worst they must begin to mend. Clearly, however, much will depend upon the course of politics on the Continent and upon your tariff changes. Should France calm down and the Russo-Russian difficulty be smoothed over, the Continent may devote itself to industrial pursuits, while your tariff changes, if in the direction of beneficial reductions, may do our manufacturers a great deal of good.

At Glasgow warrants have scarcely moved at all during the week, and remain at 47 10 to 48 10 ton, with only a poor demand. Makers' brands are about as of late, both in Cleveland and in Scotland, albeit at Middlesboro' No. 3 has been cut about at lower figures by some of the merchants. On the West Coast hematite pigs are remarkably inanimate at late rates, which the smelters are making desperate efforts to uphold. Few new orders are coming to hand from the Bessemer men, and your market is almost paralyzed by the uncertainty as to the tariff changes. Elsewhere all classes of crude irons are being pushed by hoisters at lower figures, in order to persuade consumers and others to renew their purchases. Even under these conditions the sales effected have been minute in number and volume. The wire manufacturers have lowered their prices by 20 10 ton, and the galvanized-iron makers are very irregular. For sheets there is a fair demand at about £8 for ordinary angles, and other sorts *pro rata*. Marked bars are 47 10 to 48 10, as before, and all other prices are nominally unaltered, but virtually undressed to an extent unknown

for a long time past. For iron rails there are a few small inquiries in the market for light sections, which are quoted at £5 and upward, but the movement in this class of articles is necessarily extremely small under existing conditions. Old rails are very dull and nominal at your cabled rates. There are a few inquiries for shipments to the States, but I have not heard of any sales of moment lately. There is some little call for heavy wrought scrap iron, which is called 58 10 to 60 10 ton, f.o.b. London, but freights are said to be high and scarce for that class of material. For old railway leaf-spring steel buyers offer £4. 10, c.i.f. New York, and £4. 12/6 Philadelphia or Baltimore, but the selling price is nominally 2 1/2 more. Blooms are not much sought after, and are nominal at £4. 7. 6 to £4. 12. 6 1/2 ton, with lowest offers on East and West Coasts. Crop ends are 57 10 to 62 10 1/2 ton, run of the mill, but are not in demand for export. The steel-rail market is extremely dull, and prices are so "subject to special quotations" that it is useless to record the open rates. Probably £4. 10/ would be accepted for usual sections and weights, or even less, for a large order. Baledow-Vaughans are making 5000 tons weekly, and are again preparing to enlarge their rate of production.

#### SCOTCH PIG IRON

has been very dull since my last report, with a decline in warrants and an almost entire absence of speculation. The demand for makers' brands is also quiet, perhaps owing to the larger importations of Middlesboro' pig iron into Scotland. Should this importation grow we might expect a reduction in Scotch iron, makers' brands of which have for some months past been dear, as compared with the price of warrants. There are now 107 furnaces at work in Scotland (including nine on hematites), against 105 a year ago. The three furnaces at Calder under repair will shortly be restarted. In Connell's stores there are 602,843 tons (a decrease last week of 925 tons), against 631,090 tons this date 1882, and 637,526 tons in June, 1882. Shipments to date this year have increased 7115 tons on a total of 33,622 tons, while importations from Middlesboro' have been 20,421 tons, a decrease of 1319 tons this year. Writing from Glasgow on January 27, James Watson & Co. said: "The Scotch iron market has been flat this week, the price of warrants having receded 6d. 10 ton, with an absence of speculative buying, and a quieter demand for makers' iron. The Middlesboro' market also exceedingly dull and very little fresh business is reported. On Monday last the warrant market opened at 48 1/2, with a small business transacted down to 48 1/2 10 ton. On Tuesday business was done from 48 1/2 to 48 1/4, cash, and on Wednesday the price further receded to 47 10, cash. Yesterday the market rallied to 48 1/2, but today the improvement was lost, as low as 47 9/16 being accepted, closing with buyers at 47 10/10, sellers naming 47 10 1/2 10 ton. The shipments last week were 5051 tons, as compared with 7742 tons for the corresponding week of last year." We quote:

No. 1	No. 2	No. 3
G. M. B., at Glasgow	49/3	50/0
Clyde	50/0	50/0
Colne	66/0	53/6
Langloan	67/0	50/0
Gartsherrie	69/3	54/1
Summerlee	62/6	52/0
Calder	63/0	51/0
Carbro	56/6	53/2
Glenavon Creek, at Ardrossan	56/6	52/0
Eslington	58/3	49/0
Dalmellington	58/3	51/0
Shotts, at Leith	62/6	52/0
Kinnel, at Boness	49/6	48/0
Carrown, at Grangemouth	31/0	...

#### MIDDLESBORO' PIG IRON

has felt the depressing influences which have pervaded and are pervading the market generally. No. 3 is very irregular and may be bought in one quarter or another at any price between 42 1/2 and 42 10 1/2 ton. Stocks in the stores are decreasing, but it is believed that the returns for the month will not show any material general decrease, as the shipments are not good, even for the season. For G. M. B. net cash, less 2 1/2%, f.o.b. at makers' wharves in the Tees, current prices are:

No. 1 Foundry	46/9	Mottled	47/1
"	49/2	White	49/9
"	42/9	Refined metal	50/0
"	47/1	Kentledge	42/9
"	47/1	Forge	47/1

The finned-iron works of the North of England are much less active, and some of them are likely to suspend several days weekly unless new contracts should speedily be secured.

#### REMATTE PIG IRON

is dull and nominal, despite the efforts of the West Coast smelters to uphold values. Extra little business is being done, with mixed parcels at 51 10 to 53 10, and makers' brands for moderate-sized lots as under:

No. 1	No. 2	No. 3
Cleator	59/0	58/0
Longsle	54/0	53/5
Waddington	51/0	52/0
West Cumberland	52/0	52/0
Lowther	54/9	53/5
Moore Bay	54/9	53/5
Waddington	54/9	53/5
Harrowing	54/6	53/5
Solway	54/0	53/5
Maryport	53/0	52/0

Large buyers could shade these rates. For North of England hematites, f.o.b. Cumberland ports, &c., prices are:

Ordinary	Bessemer
No. 1	51/0
No. 2	52/0
No. 3	52/0
No. 4 Foundry	52/0
No. 4 Forge	52/0
Mottled	52/0
White	54/0

THE NORTHERN IRON TRADE.

I give you the subjoined report made by Mr. Waterhouse, the sworn accountant to the Northern Board of Arbitration, not only for its interest *per se*, but also as being likely to be of service should your "free-ship" resolution come in on April 1:

GENTLEMEN: Having collected from the firms and companies belonging to your board the returns of their sales of manufactured iron during the three months ending December 31, last, and having verified the same by an examination of their books, I certify the average net selling price 10 ton to have been as follows: Of all classes of iron, £6. 5 1/2, of all classes of iron with the exception of rails, £6. 8 7. The sales during the three months ending December 31, 1882, of all classes of iron were 154,210 tons, of which 100,000 tons were rails.

#### YOUR TARIFF

discussions are still followed with undiminished interest, although it is feared, somehow, that things won't work round as they ought to do—from a British standpoint, of course. At the moment, the general opinion is that the Democrats will have the tariff revision in their own hands next year, and that no changes of moment appear to be likely this session. The Paris correspondent of the *Ironmonger* says: "An American manufacturer in Paris informs me that he sees no prospect of an amendment of the United States tariff this year. He said to me: 'We shall still continue to use Jessop's steel at our screw works. It is rolled a little closer than other material which might be purchased at a cheaper rate in America. Our steel makers are very inexperienced, as compared with English hands. It is only a few years since American steel acquired any reputation in the market. Still, we do not care to make any change in the material manipulated by our men. They have been used to Jessop's steel for years past, and, as they work it with much greater facility than us, they would be seriously disconcerted were any American steel to be placed in their hands. Not that the American steel cannot bear comparison with some of the steel which we import, but when men have trained themselves to a particular class of steel they know exactly how to deal with it; their manipulation becomes a second nature to them, as it were, and any tentative experiments would represent a serious loss of time, trouble and money.'"

#### IN TIN PLATES

there have been no developments of note during the week. The demand does not show any particular expansion, mostly owing to the slackness of the inquiry from your market, which is not buying with freedom—a fact attributed here to tariff uncertainties. The banks in South Wales and elsewhere are realizing tin plates for the recovery of advances made to the firms which failed recently, and so are keeping down prices. Whether there would have been greater buoyancy in the absence of such realizations is a matter for conjecture, but such appears to be likely, viewing the recent great decrease in the rate of production. For best stamping charcoal, 23 1/2 25%; best charcoal, 21 1/2 22%; common charcoal, 10 1/2 to 20 1/2; coke brands, 16 1/2 to 17 1/2; common cokes, 15 1/2 to 16 1/2; and coke ternes, L.C., 15 1/2 to 16 1/2, are quotations.

#### AN EXTRAORDINARY YARN.

Since the days of Barnum's old razor trick on board ship I have come across nothing equal to the following truly extraordinary yarn, which I give you *verb, et lit.* as I clip it from a newspaper: "The mystery is the number of cheap razors which go to New York. These razors were not made to shave, but to sell. Their makers say of them that they are as useless against a beard as a brick. What was their use? Inquiry was urgent, and the discovery was presently made that the article was used for razor fights among the New York darkies. They get the blade loose in the handle, and when debate waxes warm they whip out the razor, swing back the blade against the hat, and go to work to slice a man's face into chips. Such is the story. In South America razors are used for cutting sugar canes. The juice destroys the weapon after a day's work, and the cutter throws it away, beginning with a fresh razor next morning. Hence the enormous consumption." Now, if there be any "mystery" in this dark business, pray let us have it revealed. I know nothing of the New York darkies; you should know everything. We look to *The Iron Age* for enlightenment, anyhow! As to the razors for cutting sugar canes ("ha! ha! ha!") I wonder if the scribe who threw this piece of composition together ever heard of matches! My own opinion is that somebody has got the drop on the innocent writer of this pretty story.

#### FOREIGN.

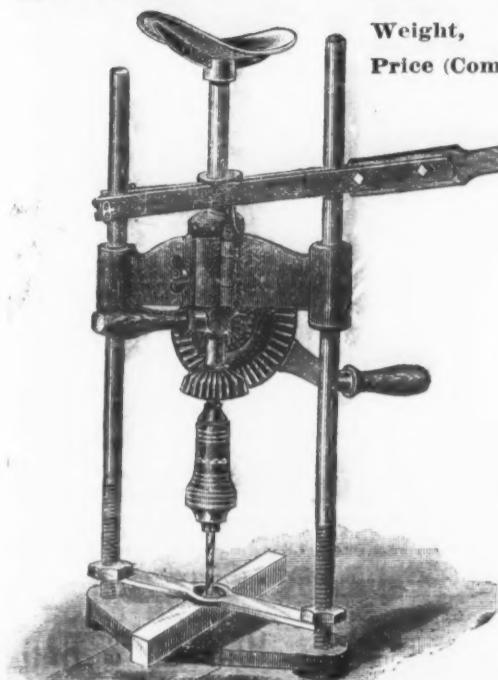
##### (Moniteur des Intérêts Matériels.)

PARIS, Jan. 27, 1883.—Metals—Business has begun to revive a little, but, on the whole, still dull, especially in metals, quotations of which have, however, undergone no change. We quote, at the close: "Chili Bars, 72 1/2 75 1/2; Ingots and Slabs, 60; Best Selected, 65 1/2; Billets and Strips, 55 1/2 55; Australian and English Iron." No change has occurred; Merchant steel sells in this city at 10 francs and flooring iron at 10 to 12 1/2. The trade papers begin to express the fear that in spite of the large consumption in France, the market may become glutted with iron, the more so as the Government, for financial reasons, will necessarily take less iron and steel than had at first been positively counted upon. Whether this is the case, large new works spring up like mushrooms in all directions, at St. Nazaire, Brest, Valenciennes, &c., will not doubtfully swell the amounts available this year notably. In this manner some 300,000 tons extra will be thrown upon the market, while our present productive capacity suffices as it stands. Hence the only remedy for a partial outlet—at least, for this excess of output—will be extended exportation. This relates to Steel Rails in particular, wh ch will have to be sold very low abroad in order to compete with the old ones, and will therefore entail losses. Another alternative is to turn to the manufacture of iron castings, which are in great demand in America, but, on the whole, still dull, especially looking for fresh orders for more distant delivery; for the moment they are engaged in filling old ones, but these will soon be exhausted, when they will be compelled to go on from hand-to-mouth till the spring trade may come to their assistance, if it does sufficiently, about which doubts are entertained. Of course the rolling mills passing through their own blast furnaces are bet-

ter situated than the rest. Meanwhile, Pig Iron is quite firm. Foundry at 7 1/2; Puddling at 6 1/2, and Comm'ns do, at 5 25 1/2. Luxembourg is steady at 5 25

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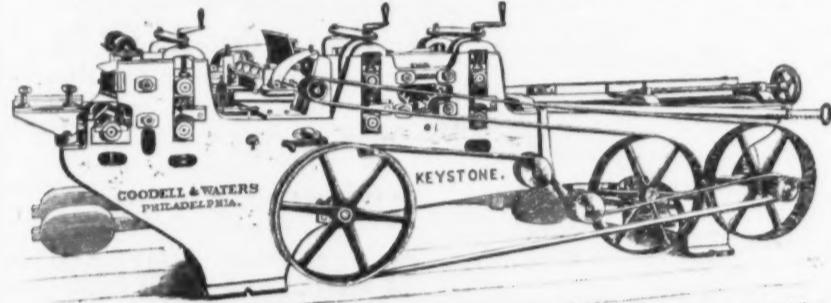
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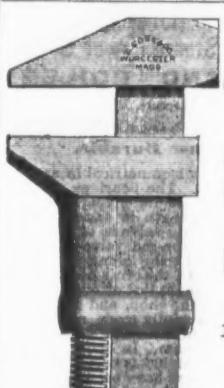
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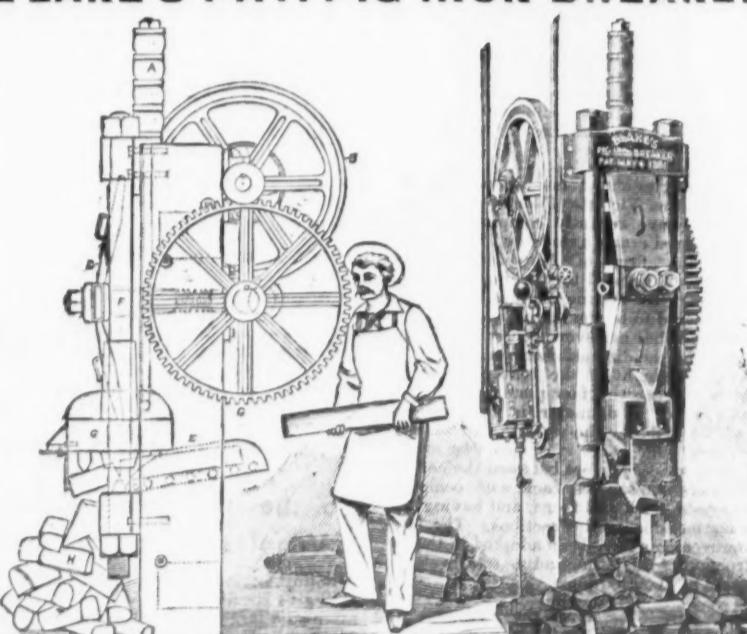
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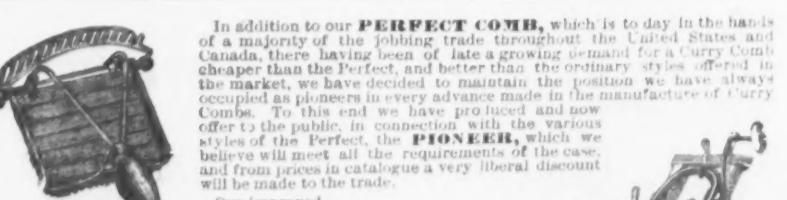


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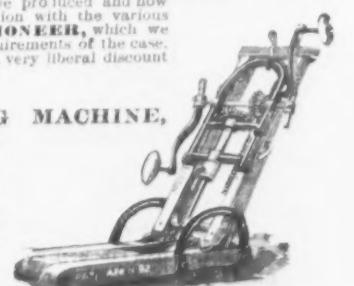


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**LAWRENCE CURRY COMB CO.**, 309 East 22d St., New York City.

**Sharp Tricks in the Cutlery Trade.**—“The Irish people,” says the British *Trade Journal*, “are finding out the trade tricks of the Saxon. While the Land League was powerful, nothing would sell in Ireland which was not of American or Irish production. The result was that many a hundredweight of ‘Yankee notions’ have been manufactured in this country. A meeting of the Home Manufacturing Association was held at Dublin a few days ago, when a Mr. Briscoe called attention to what he termed the frauds and deceptions practiced in the cutlery trade with regard to Ireland. The cutlers’ shops, he said, were full of articles styled ‘Irish manufacture,’ whereas not a knife or fork, or even a pen-knife blade, was made in that country. They were brought from Sheffield with the name of the Irish trader stamped upon them; but such a thing would not occur in London or any other city in the world. A strongly-worded resolution was passed; ‘That the association regret the state of the cutlery trade in Dublin, there now being nothing but repairs and grinding carried on by cutlers of Dublin; and that we condemn the strongest manner the system adopted by Dublin shop keepers of getting their names stamped on foreign-made cutlery.’”

It is rumored in and about Albany that the New York Central people have several fast locomotives under way. Rumor also says that they are intended for hauling 15 drawing-room cars or sleepers over any part of the road, except, of course, the “hill” between Albany and Schenectady, at 60 miles per hour. There is also report that considerable latitude has been given to the locomotive shops in the way of design, and that a heavy premium has been offered for the best engine. The business part of the scheme is easily enough understood. Fast and heavy trains are to be hauled from Albany to Buffalo and from Albany to New York. The mechanical end of the scheme is one that can be considered from several points of view. The New York Central engines, as at present constructed, perform remarkably good service. Their coal bills are low, and we have the impression that in the matter of repairs, power, &c., they compare favorably with almost anything in the country. Normally, they are overloaded, and the fast trains, once delayed, rarely succeed in making up lost time. From the character of the men in charge of the Central road, and their theoretical and practical knowledge, we judge that something good is to be expected. This would be an excellent chance to try Strong’s new design for a locomotive boiler, for we apprehend that the difficulties to be encountered in designing the new engines will be in the boiler rather than in any other part of the machine.

In the *Zeitschrift für Analytische Chemie*, Tjaden Modermann remarks that he has for some time been accustomed to prepare pure sulphuric acid by recrystallization of the hydrate ( $H_2S O_4 \cdot H_2O$ ), and finds this seldom adopted method of purification to be really an excellent one. The author has experimented in this way upon acids containing considerable quantities of lead and arsenious and nitric acids, &c., and by protracted recrystallization has in all cases obtained a pure acid from them. The method is very simple. The acid is mixed with sufficient water, and in bottles two-thirds full, exposed to the cold in the open air on a frosty night. If the mixture has been properly made, it is generally frozen throughout the next morning. The chief thing, then, is to carefully separate the crystals from the mother liquor, and for this purpose the author employs a centrifugal apparatus, so constructed that the acid only comes in contact with glass. The separation is very easily effected, and, except in cases where an acid is strongly contaminated with the different oxides of nitrogen, one recrystallization is generally sufficient.

According to one of our London contemporaries, the Victoria Foundry, of Leeds, England, have recently completed a large treble-gearied crank axle lathe for a marine engineering firm of Marseilles, France, where it will be used for turning cranks and shafts, &c., for marine engines. The lathe is considered to be the largest piece of work of its kind that has ever been constructed in Leeds, and the dimensions given are as follows: The height of the centers above the bed is 5 feet; the face-plate, which is 10 feet 4 inches in diameter, is provided with jaws for gripping the work. The lathe-bed is 9 feet wide, and is sufficiently long to allow a space 34 feet between the centers. There are two saddles, each with compound slide-rests, back and front, and having self-acting motions in all directions. The latest improvements have been adopted in the construction of the lathe, and its total weight is said to be about 90 tons.

The visible assets of the coal and iron firm of Rogers & Co., Chicago, were seized by the sheriff, February 12, on a confession of judgment for \$5000 in favor of R. M. Charrie. The house was one of the oldest in that city, having been established 40 years ago. The failure is attributed to the fact that the firm indorsed paper of the suspended Union Iron and Steel Company to the extent of \$80,000. The firm decline to make a statement. Their liabilities are estimated at \$125,000.

**Newark Hardware Works,**  
60, 62 & 64 N. J. R. R. AVENUE,  
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WITH  
**PATENT SEAMLESS SCOOPS.**  
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Delivered free on steamer or cars in New York City. Liberal discount to the Trade. Price List on application.

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Of all sizes, from 1 to 100 H. P., on hand.  
They are Popular because Reliable.  
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These Engines are very symmetrical in appearance and finely finished. The bearings are long and the shafts of large diameter, giving both large area of bearings and strength in excess of any required. The main valve is of the plain side description. The piston rod is of copper, the head pin, &c., are of steel; the crank-pin box is of composition, babbittted; the cross-head pin box is of brass. A critical steam test of every engine is made before it leaves the shop, and the necessary adjustments are carefully made, so that the machine is all ready to run the moment it is placed in position and given steam. In operation they are noiseless. Their durability is best attested by the fact that many of them have been at work for nearly 20 years, giving entire satisfaction to their owners, and having cost little or nothing for repairs. Eighteen hundred Engines of our manufacture are in use, and whenever desired, reference will be made to a great number of either of the several sizes which we make. Correspondence solicited, and engineering advice given to purchasers. Large stock of new and second-hand Machinery on hand. Also Branch House for the sale of the Sturtz Blowers. Catalogues and prices sent to any address.

**HENRY I. SNELL,**  
135 North Third St., PHILA., PA.

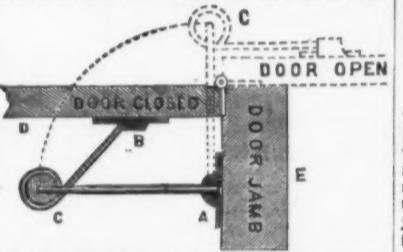
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Note.—In our recent suit against the American Lubricator Co. of Detroit, before Justice Stanley Matthews of the U. S. Supreme Court, involving their “sight feed” feature, a decree was rendered in our favor August 22, 1881.

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Mention *The Iron Age*.

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Cheapest, best and most convenient easily put on, requiring no alteration and much durable. Has uniform tension; holds door firmly when closed, and when the door is opened about 120 degrees of a circle, the force of the spring is reversed, and will hold the door open; combining more valuable features than any other door spring on the market, and at a price to suit the wants of the Trade.

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Bankers and dealers in COMMERCIAL PAPER.  
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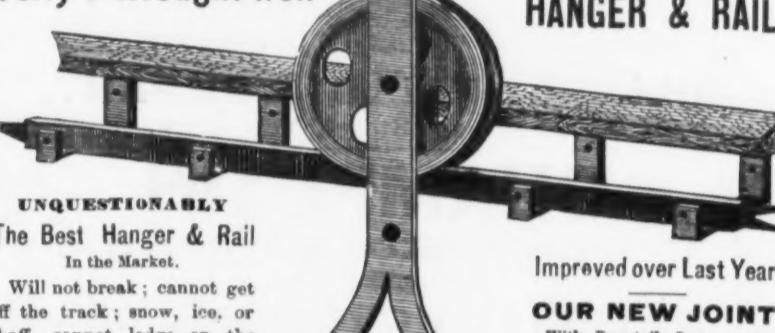
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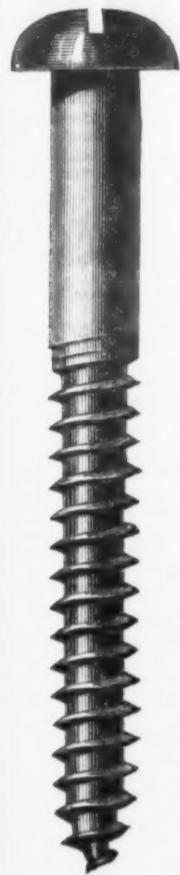
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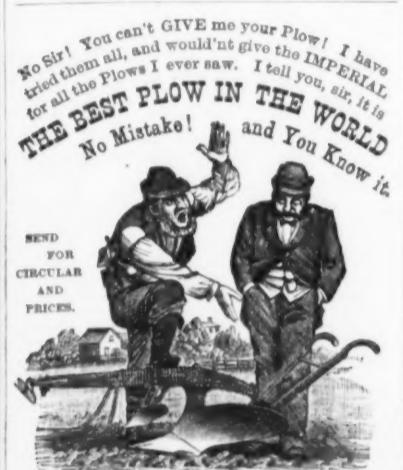
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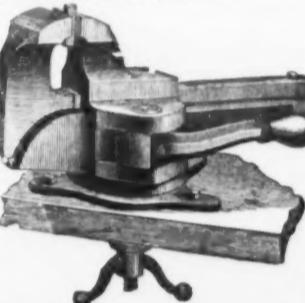


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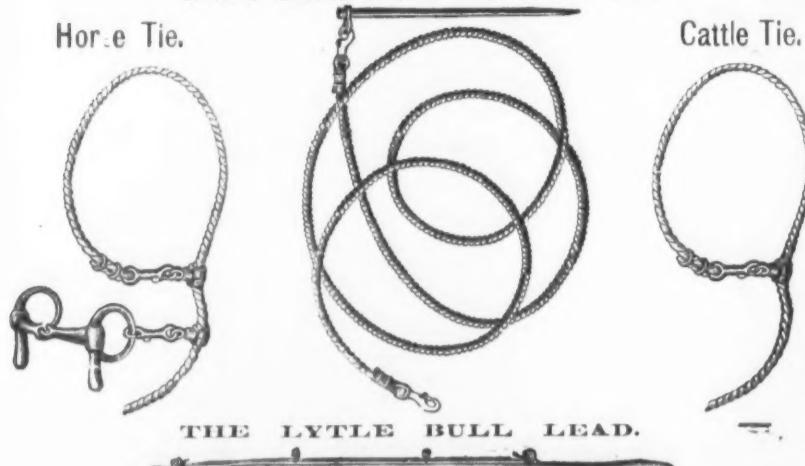
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**Buffalo Exhausters,**

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SANDS' TRIPLE MOTION WHITE MOUNTAIN ICE CREAM FREEZERS.

THE WHITE MOUNTAIN FREEZER COMPANY are headquarters for Ice Cream Freezers and Ice Crushers, being the only firm in the United States who manufacture all parts of the raw material.

Examining Committee, consisting of 50,000 citizens of the United States, have recommended the *Sands' Triple Motion White Mountain Freezer* to all persons in the world.

We have used them; they freeze quicker than any other; they save time, salt and ice; the triple motion makes smooth cream without bunches; makes more of it; galvanized iron outside; tin inside; no zinc contact with the cream; easily adjusted; substantially made; simple in construction; perfect in results. Send for descriptive circular and discount of this celebrated Freezer.

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What Will the Weather Be To-Morrow?

**POOL'S SIGNAL SERVICE BAROMETER,**

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Storm Glass and Thermometer Combined,

WILL TELL YOU.

It will detect and indicate correctly any change in the weather, twelve to forty-eight hours in advance. It will tell what kind of a storm is approaching, and from what quarter it comes—invaluable to navigators. Farmers can plan their work according to its predictions. It will save fifty times its cost in a single season. There is an accurate thermometer attached, which alone is worth the price of the combination.

**THIS GREAT WEATHER INDICATOR**

IS ENDORSED BY THE MOST EMINENT PHYSICIANS, PROFESSORS and SCIENTIFIC MEN OF THE DAY

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Size of Instrument: Length, 9 $\frac{1}{2}$  Inches; Width 3 $\frac{1}{2}$  Inches; Weight, 6 Ounces.The Thermometer and Barometer are put in a nicely finished walnut frame, and *inlaid* deep, so nothing can strike the surface, with silver-plated trimmings, &c., making it a beautiful as well as useful ornament. It is composed of various chemicals, and is very accurate in foretelling the changes in the weather, particularly high wind, storm and tempest. It can be carried about or shaken up without fear of injury.

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I find Pool's Barometer works as well as one that cost fifty dollars. You can rely on it every time.  
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Pool's Barometer received in good order, and must say the instrument gives perfect satisfaction in every respect. It is neatly made and wonderfully cheap at two dollars.  
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Pool's Barometer has already saved me many times its cost, in foretelling the weather. It is a wonderful curiosity, and works to perfection.  
F. J. ROBERTSON.

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None Genuine without our Trade-Mark, and Signature of J. A. POOL, on back of Instrument, as below:



Every Instrument Warranted Perfect and Reliable.

A sample sent free to any address on receipt of \$1.00. If not satisfied on receiving the instrument, return it at once and we will refund your money. Address all orders to

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Largest Establishment of the Kind in the World.

## FOR SALE BY ALL JOBBERS.

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**SHULTZ BELTING COMP'Y,**MANUFACTURERS OF  
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Our BELTING is made of Leather, tanned on the surfaces only; the interior (which is the Fibre and strength of the hide) is not tanned, but Rawhide filled and softened by our patented process. Our Belting is more pliable, and hugs the pulley better, and transmits more power than any other belt. Our Rawhide Lace Leather, and Belt Grease, are the best in use.

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We make out of our Patent Leather, Valves for furnaces which we claim last five times as long as any other.

DEAR SIRS: We have used your valves for blowing blast furnaces. They are the best we have ever used. Stand the heat well, and outwear any others. Have some in constant use three years.

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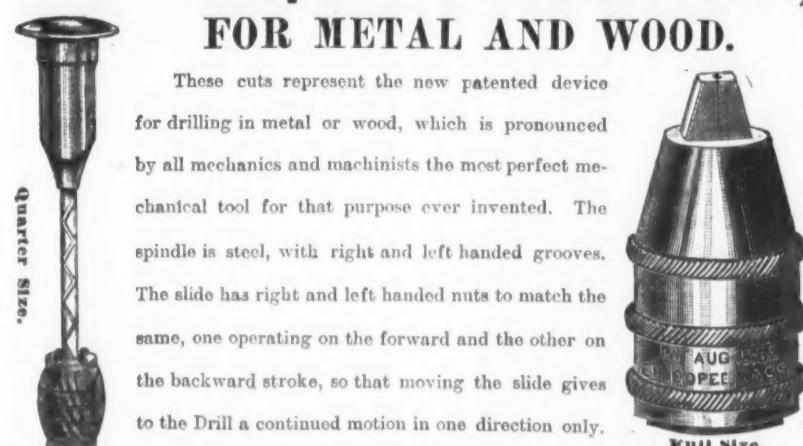
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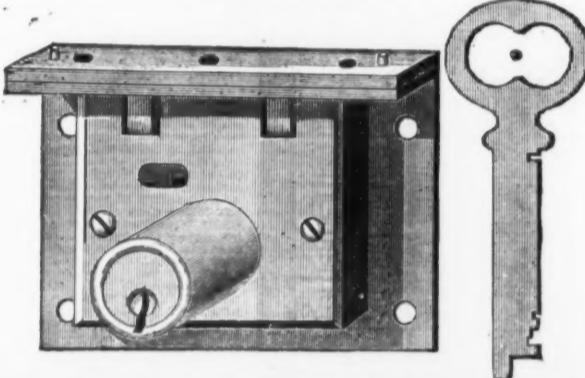
These cuts represent the new patented device for drilling in metal or wood, which is pronounced by all mechanics and machinists the most perfect mechanical tool for that purpose ever invented. The spindle is steel, with right and left handed grooves. The slide has right and left handed nuts to match the same, one operating on the forward and the other on the backward stroke, so that moving the slide gives to the Drill a continued motion in one direction only.

The chuck connected with this Drill is made entirely of steel, with hardened steel jaws, and is held on the spindle by friction, and can be easily removed to use on lathes or other tools. It is accurately made to hold "Morse Twist Drills" to 3-16 inch, and is pronounced the best SMALL CHUCK ever offered in the market.

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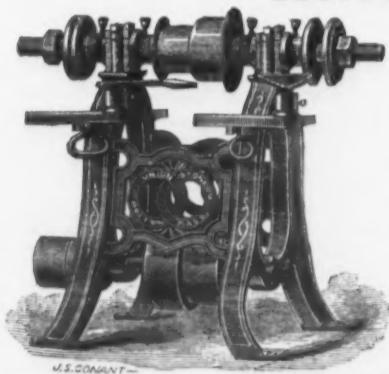


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HAS BEEN THOROUGHLY TESTED AND UNIVERSALLY APPROVED as a means of quickly and without labor restoring and preserving unsullied the brightness of Silverware, Jewelry, Nickel Stove Plates, Plated Ware, Show Cases, &c.

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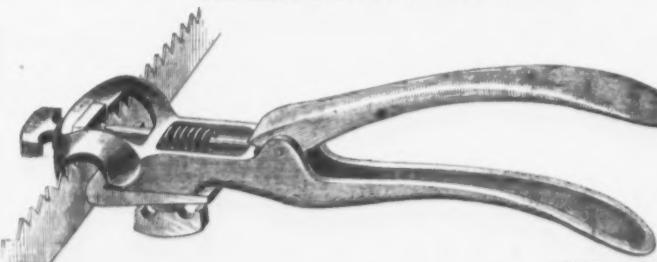
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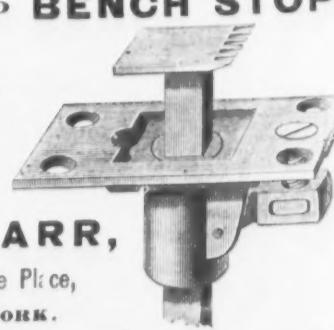
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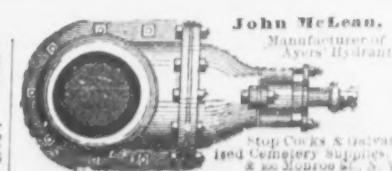
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Our fine Facing known, as WHITEHEAD'S STOVE PLATE FACING, is the best  
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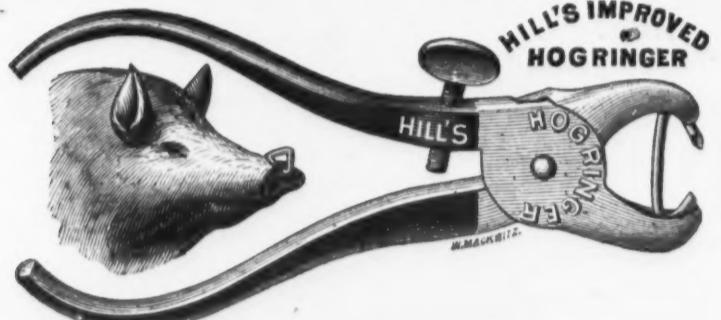
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Line of Draft direct: always Self-Adjusting; Rigid Double Handle; Double Pawl; it works at either end of the fence, at either side of the post and either side up.

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For sale by all leading wholesale Jobbing  
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LOWEST QUOTATIONS ARE DESIRABLE.

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**SELF-LOCKING SCREW CASE.**

Made from the Best Gray,  
Malleable and Sheet Iron.

This is not a Drawer Case. This Structure has been  
purposely invented on account of trouble caused by

The Standard of This Case is a Hollow Cone,  
Firm as a Rock, on Which all  
Shelves Revolve.

All Shelves can be taken off and replaced in a few  
minutes.

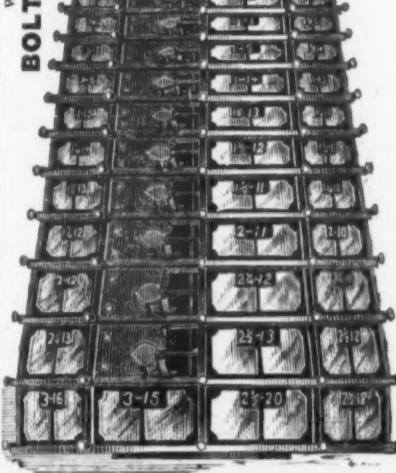
The ornamental front frames of each Circle, well  
protected, contain a piece of glass, whereby the deal-  
er can see what is in the Case, and if any number is out, can fill, or if not in stock,  
can order, which in a Drawer-Case makes a great  
deal of trouble. The front frames can be taken out  
and replaced by one at a time, thus saving the  
most perfect structure ever invented upon the  
market. With beauty and strength combined, it  
surpasses even perfection in the highest state.

YOU HAVE NO PAYMENT TO TAKE OUT, OR PUT BACK.  
No trouble of getting out shelves, or getting them back  
again, as is the case with Drawers TAKEN FROM THE  
SHELVES; OR SELL WORSE, WHEN STANDING ON THE  
COUNTER. NO LOSING OF CUSTOMERS WHILE LOOKING  
FOR DRAWERS.

IN OUR CASE ONLY ONE COMPARTMENT IS OPEN AT THE  
TIME AND THE BALANCE ALL CLOSED. NO ONE can get  
into the Case except the man behind the counter.  
Any number can be found instantaneously. By  
turning the right handle, shelves revolve to the left,  
DECREASE. All numbers are cast on the  
Frames and gold-bronzed. WE GUARANTEE OUR CASE  
FOR 5 YEARS, AND IF NOT FOUND SUPERIOR TO ANY CASE  
WE WILL REFUND THE PURCHASE PRICE. APPRAISE IT, AND  
IF NOT FOUND SUPERIOR, WE WILL REFUND THE  
MONEY.

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WE ALSO MANUFACTURE  
**BOLT and SHOT CASES.**

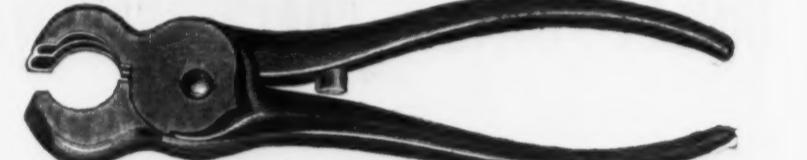


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Successors to W. R. Baker & Co., DAYTON, OHIO.

We would respectfully call your attention to our Bolt and Screw Cases, which we have been introducing into the market for the past year, and which we are now offering to you at a very reasonable price. We have greatly increased our facilities for manufacturing the same, in which connection we have added several new departments, which make them now more perfect and complete, as well as ornamental, as could be desired. We are now using iron standards, screwed firmly into iron hub  
and base, which makes them perfectly true and strong. The frames are made of pine, and are  
joined with the grain of the wood crossed, glued and  
screws together and braced with iron rods, which bind the whole firmly together, thus making  
it impossible to pull them apart. The weight  
that can be put into them, and by which means they  
revolve perfectly true and easy. Both Bolt and Screw Cases are made of the best seasoned Tennessee poplar, finished in imitation of black  
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printed on, making it at once a most desirable  
and beautiful appendage to hardware stores.  
We have correspondence with American Screw  
Co. and innumerable testimonials from the  
best jobbing hardware houses in the country, as  
the most practicable, durable and ornamental  
cases in the market, and no hardware or iron  
standard is so well adapted for the purpose of  
mixing of screws and bolts, thus enabling them  
to keep their stock in good shape, thereby mak-  
ing it a pleasure to handle them instead of a  
trunk. The convenience of the case, and the  
convenience of handling, is a desideratum not to be  
brought for the cost of a case. The drawers are  
provided with stops to prevent their removal,  
and will hold a package of bolts or screws.

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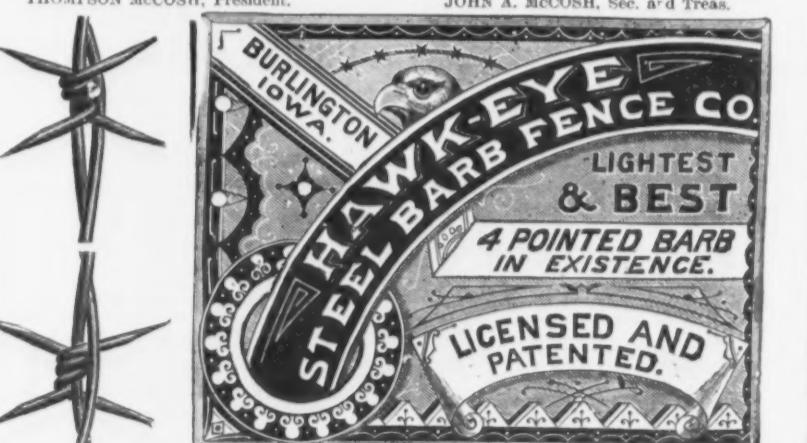
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Manufactured by  
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"Superior in Every Respect."  
This is one of the best selling Locks in the market,  
and afford a safe and secure hold. It is very handsomely  
and strongly made of the best material, very hand-  
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Orders solicited. Address as above.  
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Will shell more corn with less labor than any other  
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spiral springs for the presser bar. Every machine  
warranted to do as good work as any sheller made.  
Ask to see the Cornell Sheller, try it and you  
will buy no other. Adores.

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MANUFACTURERS OF JAPANS AND COPAL VARNISHES OF ALL DESCRIPTIONS.

## Baking Japans and Bronzing Varnishes SPECIALTIES.

Our Baking Japans and Bronzing Varnishes are being used by the leading consumers of these articles throughout this country and abroad, and we beg to refer to the following parties as to their superior qualities: Singer Mfg. Co., Elizabethport, N. J., and Glasgow, Scotland. Wheeler & Wilson Mfg. Co., Bridgeport, Ct. American Sewing Machine Co., Philadelphia, Pa. St. John Sewing Machine Co., Springfield, Ohio. Medina Mfg. Co., Medina, N. Y. New Home Sewing Machine Co., Orange, Mass. Florence Sewing Machine Co., Florence, Mass. Sargent & Co., New Haven, Ct. P. & F. Corbin, New Britain, Ct. Stanley Works, New Britain, Ct. Landers, Frary & Clark, New Britain, Ct. Eaton, Cole & Burnham Co., Bridgeport, Ct. Norwalk Lock Co., Norwalk, Ct. Bradley & Hubbard Mfg. Co., Meriden, Ct. Charles Parker Co., Meriden, Ct. Washburn & Moen Mfg. Co., Worcester, Mass. Trenton Lock and Hardware Co., Trenton, N. J. Peck, Stow & Wilcox Co., Southington, Ct., and Cleveland, Ohio. Shurmer & Massey Mfg. Co., Cleveland, Ohio. Elbell, Gilliam & Co., Canton, Ohio. Livingston & Co., Pittsburgh, Pa. James Smart Mfg. Co., Brockville, Canada. Burrows, Stewart & Milne, Hamilton, Canada. R. M. Wanzer & Co., Hamilton, Can. Buffalo Hardware Co., Buffalo, N. Y. Sidney Shepard & Co., Buffalo, N. Y. Enterprise Mfg. Co., Philadelp'a, Pa. E. & T. Fairbanks & Co., St. Johnsbury, Vt. Buffalo Scale Co., Buffalo, N. Y. Jos. Barnhurst, Philadelphia, Pa. Van Wagoner & Williams, New York, and many others.

## SANFORD'S PATENT OX SHOE

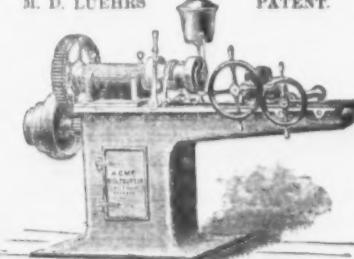


The only shoe that will not lame an ox, which he can stand up square upon, and will prevent slipping. Send for circulars. Liberal discount to dealers. Manufactured by

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Double Automatic Bolt Cutters. Single Bolt Cutters, 1 in. to 4 in. Rapid Bolt Cutters. Nut Tappers, 1/2 in. to 1 1/2 in. Rapid Nut Tappers, 3/4 and 1 1/2 in. Bolt Headers, four different styles. Bolt Pointers, Nut Presses, &c.

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**RED JACKET**  
ADJUSTABLE  
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Lift and Force  
PUMPS,

For General Purposes.

Highest Prizes awarded where ever exhibited.

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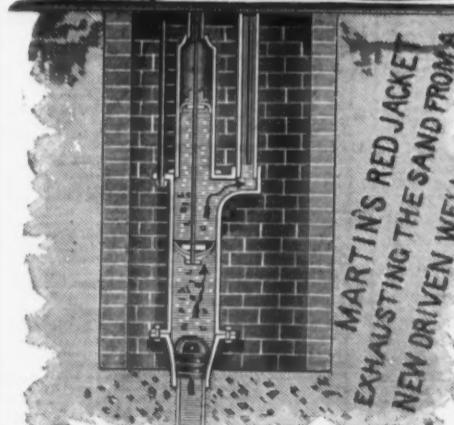
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IRON AND STEEL  
OF EVERY DESCRIPTION  
DROP FORGINGS  
For Fire Arms, Saw and Wind Mills, Engine, Tool and Machine parts of all kinds. Railroad and Marine Work. Agricultural Implements and Machinery, Carriages and Wagon Irons, Electrical and other Apparatus.

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Having bought all the machinery of the Star Tool Co., we are now prepared to supply the trade with a complete line of these goods. We use none but the best material, and all goods purchased of us are fully warranted. A complete list, with prices, sent on application.

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These wrenches are made from the best of wrought iron, with steel head and jaw, case-hardened throughout, and not only combine all of the superior qualities of our cylinder or gas pipe wrenches, but also all requisite combinations of a regular nut wrench thus making a combination which has no equal.

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### HENDERSON'S PATENT REFRACtORY COMPOUNDS.

#### THE SILICA BRICK OR COMPOUND.

This compound is adapted to all uses to which silica and fire-clay brick are used. Its advantages are: Production below cost of common red brick for labor and materials; neither expands nor contracts from molding to highest temperature. Insusability at any temperatures used in the arts. Self-baking or burned in the use. Can be made in any locality where sand is obtainable. No outlay of capital for apparatus. Made by unskilled labor at place where used. May be used in bulk by ramming behind a core, or molded into brick. Repairs are made by patching the fire-worn surface with the same compound. Is adapted for molding steel castings.

#### THE LIME OR MAGNESIAN LIME COMPOUND.

This possesses all of the above advantages, with the addition of being better adapted for silver and lead smelting furnaces, iron and steel converting furnaces, and other uses where greater wear or chemical changes are produced by use of silica, and of being made in localities where sand is not obtainable, and of being below cost of red brick for labor and material.

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THE BODY—is fitted with an adjustable Cast-Steel Jaw at the point where it comes in contact with the Pipe, which Jaw can be renewed at any time by simply removing one screw. By this system the wearing away of the Jaw (which in other cutters is the first part to give out) is effectually prevented, and this tool can be kept in first-class order at all times.

THE WHEEL BLOCK.—This is also of Steel, neatly fitted to its socket and cannot be dropped out. It is much more durable than the cast-iron blocks and is hardened at the point where the rod comes in contact with it.

THE HANDLE—of this Cutter is put on to stay, and cannot be removed by the roughest usage, as it is an iron handle, cast fast to the Rod, operating the block.

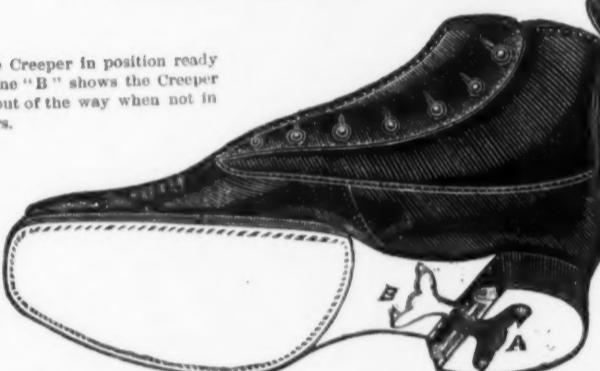
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"A" represents the Creeper in position ready for use. The dotted line "B" shows the Creeper thrown back entirely out of the way when not in use, or walking indoors.



We offer to the Trade this season this favorite Creeper greatly improved.

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"COMMON SENSE" MOUSE TRAPS, MALLETS, BOOT JACKS,  
ROSEWOOD FAUCETS, &c. Fine Wood Turning a Specialty.



### PRENTISS' PAT. VISSES,

Adjustable Jaw.

Stationary or Pat. Swivel Bottoms.

ADAPTED TO ALL KINDS OF VISE WORK. ALSO

"PEERLESS" SWIVEL PIPE GRIP,  
FITS ANY VISE. SOLD BY THE TRADE.

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Only double ring ever invented. The only ring that will effectively keep the hog from getting out. No sharp points in the nose to keep it sore.

Ringers 75c. Rings, 4c. 10c. Holders, 75c. Huskers, 15c.

CHAMBERS, BERING & QUINLAN, Exclusive Manufacturers, Decatur, Ill.

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## CAUTION, IMPORTANT.

The great demand for and rapid increase in the popularity of the PERFECTION WINDOW CLEANER has influenced unprincipled parties to offer for sale an inferior and worthless imitation. We therefore caution all such persons and the trade generally against the manufacture, sale or use of any RUBBER WINDOW CLEANER not bearing our stamp, as all others are infringements, against which we shall protect ourselves under the rights granted us in U. S. Patents to the full extent of the law.

The only perfect glass or Window Cleaner yet devised. Has been constructed with a combination of an Elastic Cleaning Edge, and a yielding cushion or support. We own all the patents embodying one or both of these principles, and, by combining them, offer you a perfect Window Cleaner. They are made of the very best material, and are cheap, useful and durable.

Beware of all inferior and fraudulent imitations. Buy only the "PERFECTION," and you escape all infringements.

## PERFECTION WINDOW CLEANER CO.,

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PAT'D JULY 8, 1875. JUNE 22, 1880.  
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The world-renowned  
DUNEFIELD'S IGNITING MATCHES, are the  
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NO plating, NO imitation: a lot nickel  
silver, 10 cents; solid  
silver, 15 cents; etc.  
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DUNEFIELD, 100, S. W.  
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Of all description.

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GRINDSTONES

Of All Kinds.

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# New York Wholesale Prices, February, 14, 1883.

## HARDWARE.

**Anvils.**  
Eagle Anvils American..... \$2 100—dis 20%  
Wright's..... 110 60—dis 10%  
Trenton's..... 950 60—dis 10%  
Wilkinson's..... 1000

Anvil Vise and Drill.

Milner Falls Co., \$16.00

Cheney Anvil and Vise

Augers and Bits.

Cook's Auger Co.

Douglas Mfg. Co.

E. Jennings & Co.

Humphreys Mfg. Co.

Keeler's French, Swift & Co.

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Nobles Mfg. Co.

Snell Mfg. Co.

Vivian & Co. Extension Lip.

Cook's Douglass Mfg. Co.

Patent Solid Head.

Lewis' Patent Single Twist.

Patent Auger, Dovell, Macmillan, Powers and

Hand Rail Bits.

Russell Jennings' Augers.

Muscle and Millwright's Augers.

Illustration Jennings' Bits.

Ives' Jennings' Bits.

Snell Mfg. Co. Jennings Bits.

Andrews' Bits.

Expan's Bits, small set 1 1/2 gross, \$25.

Expansive Bits, Ives'..... \$20 00

Expansive Bits, Parker's..... \$20 00

Expansive Bits, Party, \$17 and \$20.

Hollow Augers, French, Swift & Co.

Hollow Augers, French, Douglass'..... \$25.

Hollow Augers, French, Hartwell's..... \$25.

Hollow Augers, French, Adjustable, \$10.

Hollow Augers, Ives' Expansive, each \$2.00—dis 20%.

Hollow Augers, Universal Expan, each \$4.50—dis 20%.

Wood's..... \$25.

Gimlet Bits, Diamond..... \$20 00

Gimlet Bits, Bee'..... \$25.

Double Cut Gimlet Bits, Shepardson's..... \$20 00

Union Cut Gimlet Bits, Miller's Mfg. Co. dis 20%.

Double Cut Gimlet Bits, Hartwell's..... \$20 00

Double Cut Gimlet Bits, Douglass'..... \$20 00

Double Cut Gimlet Bits, Ives'..... \$20 00

Morse's Bit Stock Drill..... \$25.

Burnside's Bit Stock Drill..... \$25.

L'Hommedieu's Slip Augers..... \$15 00

Awl Heads.

Sewing, Brass Ferrule..... \$1.50 per gross—dis 20%.

Sewing, Short..... \$1.00 per gross—dis 20%.

Patent Sewing, Long..... \$1.50 per gross—dis 20%.

Patent Peg, Leather Top..... \$12.00 per gross.

Awl Sets, &c., &c.

Awl, Sewing, Common..... \$1 gross—dis 20%.

Awl, Shouldered Peg..... \$1 gross—dis 20%.

Awl, Patent Peg..... \$1 gross—dis 20%.

Awl, Standard Brad..... \$1 gross—dis 20%.

Awl, Handled Brad..... \$1.50 per gross—dis 20%.

Awl, Sardine Scissors..... \$1.50 per gross—dis 20%.

Awl, Socket Scratches..... \$1.50 per gross—dis 20%.

Awl, Star..... \$1.50 per gross—dis 20%.

Sprague, No. 1, \$2.00; No. 2, \$2.35; No. 3, \$2.50.

Awl, W. T. & S. Mfg. Co.

Bradley's Awls..... \$1.50.

Awl, Standard..... \$1.50.

Awl, Standard



# NEW YORK WHOLESALE PRICES, February 14, 1883.

## METALS.

**IRON.**—DUTY: Bars, 1 to 1½ in., \$ per lb.; Sheet, Bars Hoop and Scroll, 1½ to 3 in., \$ per lb.; provided that none of the above Iron shall pay a less rate of duty than 10 per cent. Pig, \$ per ton; Polished Sheet, 3c. per lb.; Wrought Scrap, \$ per ton; Cast Scrap, \$ per ton; Rail-road, 2c. per lb.; Boiler and Plate, \$ per lb.

### American Iron.

Foundry, No. IX. \$ per ton \$2.00  
Pig, No. 2x. \$ per ton 2.00  
Gray Foundry. \$ per ton 20.00 @ 21.00

### Scotch Iron.

Eglinton. \$ per ton 31.50 @ 22.00  
Carmarthen. \$ per ton 32.00 @ 23.00  
Courtney. \$ per ton 24.00 @ 25.00  
Glasgow. \$ per ton 22.00 @ 23.00  
Gartsherrie. \$ per ton 24.50 @ 25.00  
Langholm. \$ per ton 26.50 @ 26.00  
English Iron. Redcar No. 4. \$ per ton 21.00

### Rails.

Bar. \$ per ton Nominal.  
Steel at Eastern mills. \$ per ton \$9.00 @ 10.00  
Old Rails 1s. \$ per ton 2.50  
Old Rails D.H. \$ per ton 27.00 @ 27.50

### Scrap.

Wrought Scrap \$ per ton from yard. 27.00  
Sheep Scrap Ends. 22.00  
Bar Iron from Store.

Common Iron. 1 to 1 in. round and square. 1 \$ per lb. 2.30  
1 to 6 in. 3½ to 1 in. 1 \$ per lb. 2.50  
1 to 6 in. round and square. 1 \$ per lb. 2.700  
feet—6 and 11-15 round and square. 1 \$ per lb. 2.600  
bands—1 to 6x10 to No. 12. 1 \$ per lb. 30  
Norway Nail Rods. 1½ @ 14c

**Sheet Iron.** Common American R. G.  
Nos. 19 to 20. 2d. 4c. 6c  
21. 2d. 4c. 6c  
22. 2d. 4c. 6c  
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24. 2d. 4c. 6c  
Galvanized, 10 to 20. 2d. 4c. 6c  
Galvanized, 21 to 24. 2d. 4c. 6c  
Galvanized, 25 to 26. 2d. 4c. 6c  
Galvanized, 27. 2d. 4c. 6c  
Galvanized, 28. 2d. 4c. 6c  
Patent Plated. A. 2d. 4c. 6c  
Russia. 2d. 4c. 6c  
American Cold Rolled. 2d. 4c. 6c  
**COPPER.**—DUTY: Pig, Bar and Ingot, 2d.; Old Copper, 2d.; Manufactured including all articles of which Copper is a component of chief value, 45% ad valorem. American Ingot. 2d. See Trade Report.

**SHREATHING BRAZIERED COPPER BARS & C.** B. S. Standard ordinary sizes, 15c per sq. ft. and over. 30c

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Drawers' Copper, 10 oz. and over. 1 ft. 2d.  
Brazier's Copper, lighter than 10 oz. 1 ft. 2d.  
Circles, 8 in. diameter and over. 2d.  
Segments and Various Sheets. 2d.  
Loyalty Fine Box Copper. 2d.  
Sheathing Copper, over 12 oz. 2d. per ft.  
Bolt Copper. 2d.  
Copper Bottoms. 2d.  
No Copper is Sheathing except 12x10 inches, and not to exceed 34 oz. to the sq. ft.

TINNING. 2d.

Sheets 14 in. \$ per sheet 2d.

All other size Sheets, 14 in. \$ per sheet 2d.  
For tinning both sides, double the above amount.

NEILS' PATENT PLATED COPPER.—Net.

14 in. 15 oz. and heavier. 2d. 35c  
12 oz. and lighter. 2d. 30c

16 in. 14x12. 5 in. 14x16. 6 in. 14x20.

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24x48x30x30.

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THE LARGEST MANUFACTURER IN THE WORLD OF  
STONES FOR SCYTHES, AXES AND  
TURPENTINE HACKS, &c.

Twenty quarries from which I obtain the large variety of Choice Grits. I can furnish Stones, that will quickly give a Keen, Sharp Edge, and strong enough not to break.

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No goods sold to Retail Trade. Correspondence solicited from the Wholesale Trade, who will find satisfaction and profit in handling my goods.

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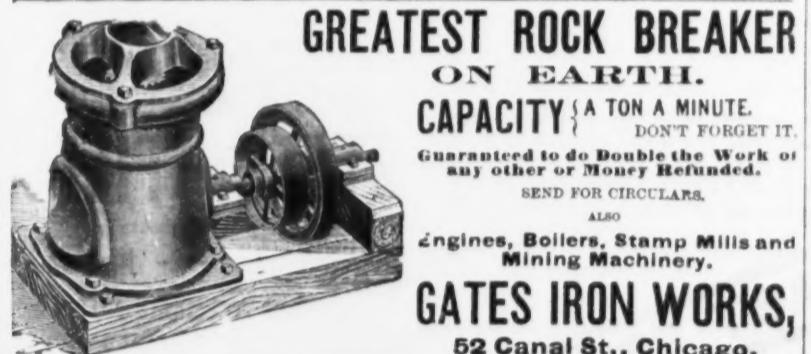
It has a Flexible Rubber Cushion or Muffler between the Jaws, which prevents any vibration, and renders Saw Filing Noiseless.

We guarantee it to make no more noise than filing on a solid piece of iron. The jaws are to inches long, and are made to open and close by simply turning the Cam Lever. It is strong, well proportioned and handsomely finished; can be easily secured with screws to a workbench or any place desired. Just what every carpenter and saw filer wants. Packed in cases of one and two dozen.

With the first order of one dozen we will furnish you a handsome Sample Stand free.

NO. 1-(to inch Jaws)-Per Dozen, \$15.00  
A LIBERAL DISCOUNT TO THE TRADE.

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AMERICAN DYNAMO-ELECTRIC MACHINE,  
For Electro-Plating, Electrotyping, &c.

Requires no Water.  
Combining  
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Latest  
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Cannot Reverse  
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Orange Mineral, Linseed Oil,  
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## AVERAGE ANALYSIS.

Per-oxide Iron	50.59	Silica	15.70
Protoxide Iron	23.02	Carbonic Acid	37
Protoxide Manganese	32	Phosphoric Acid	58
Alumina	3.27	Titanic Acid	58
Magnesia	.76	Sulphur	1.65
Lime	1.65	Soda	53.31 %
		Water, &c.	24
		Metallic Iron	16
		Metallic Manganese	
		Phosphorus	

THE CROTON MAGNETIC IRON MINES are now ready to contract for next year's delivery of their superior Magnetic Iron Ores, delivered at Port Morris, New York City or on the line of New York and New England Railroad, Erie Railroad and connections.

The ores are guaranteed to yield 50% Metallic Iron.

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Are used by all leading stove  
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are used to prevent change of  
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Switches and Dynamo Machines.  
The adoption of these ma-  
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MANUFACTURERS OF  
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In order to meet the requirements of our Export Trade, we carry at  
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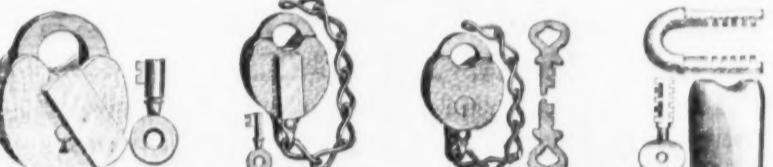
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Manufactured by JOHN J. TOWER, 96 Chambers St., New York.

BEST QUALITY. LARGE VARIETY.

Railroad and other Padlocks made to order.



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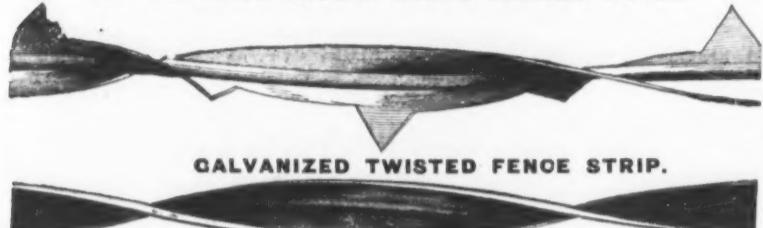
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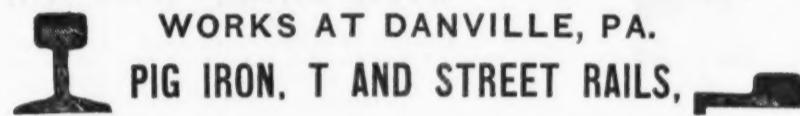
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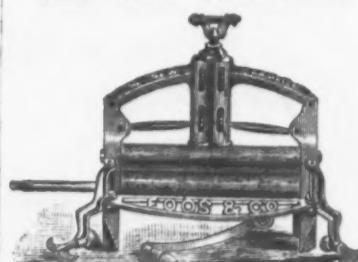
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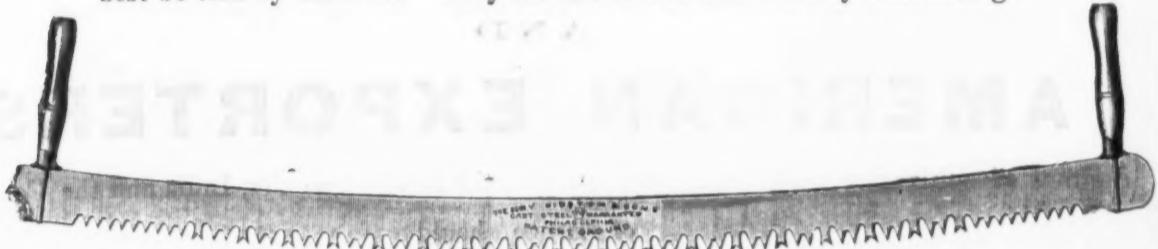
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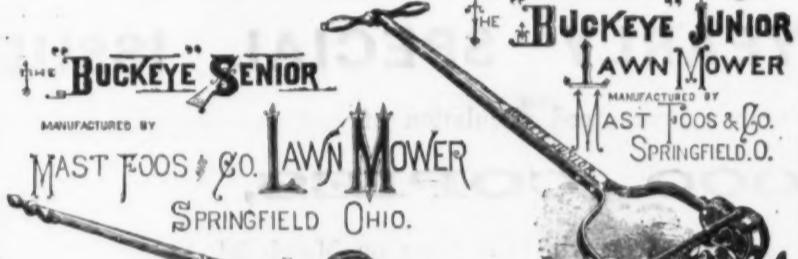
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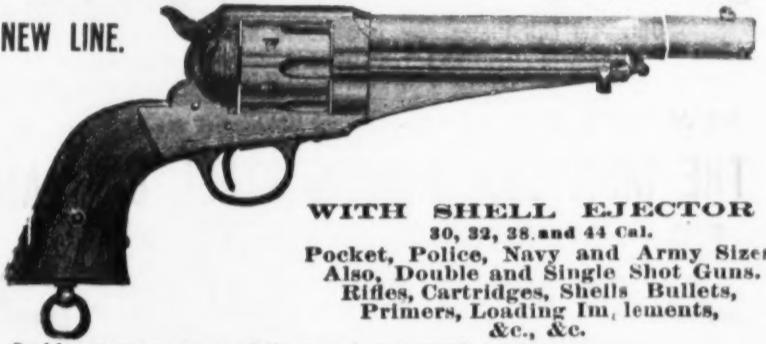
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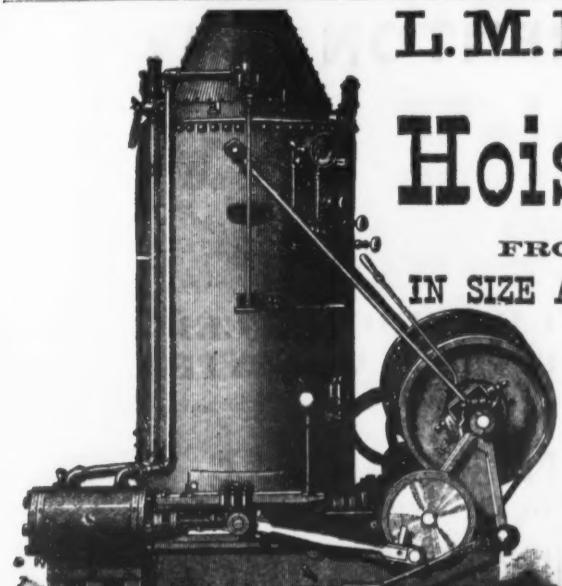
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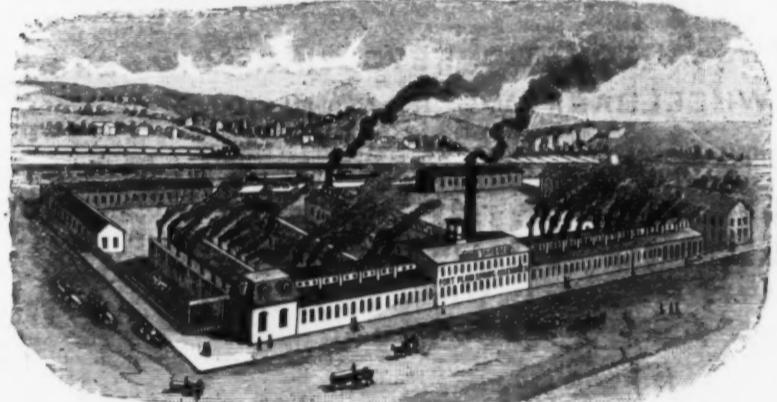
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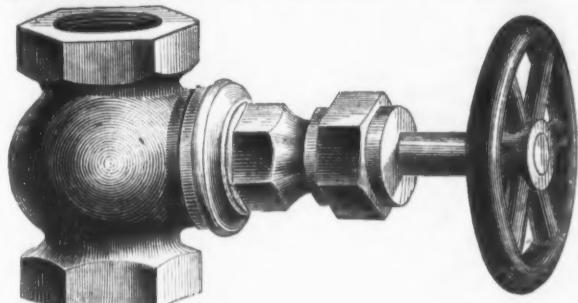
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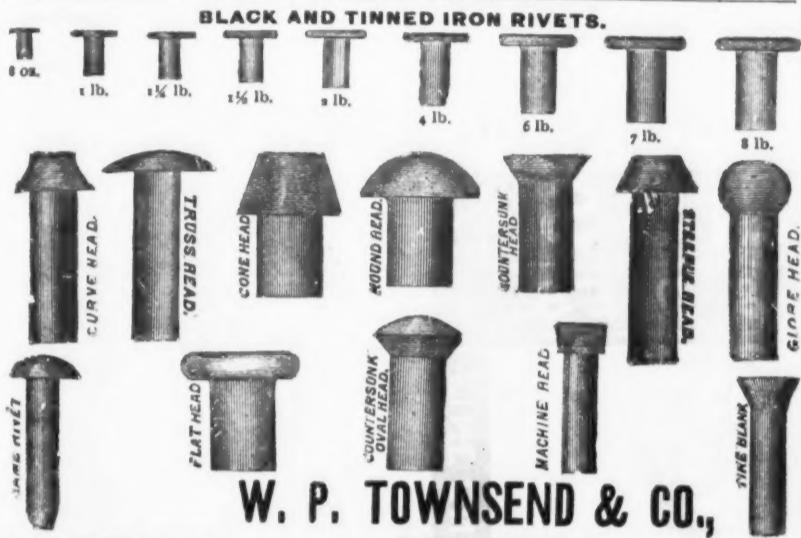
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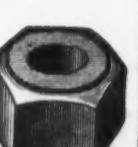
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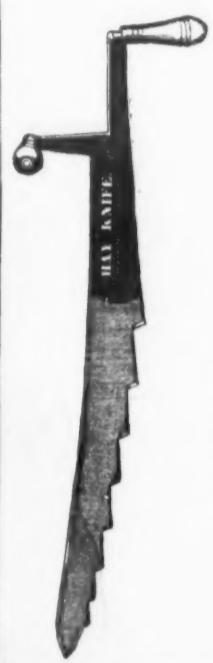
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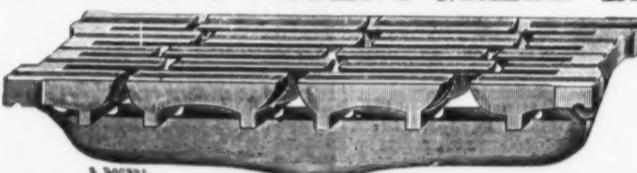
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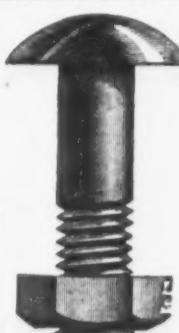
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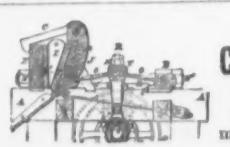
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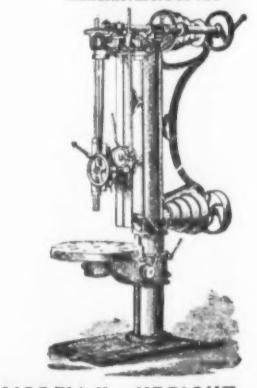
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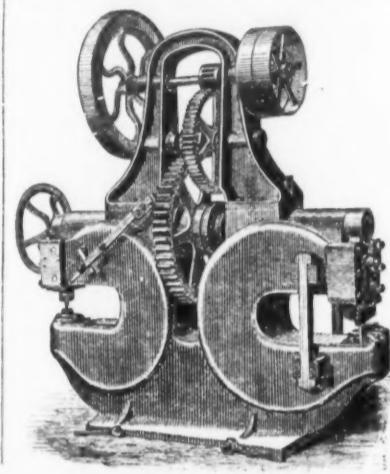
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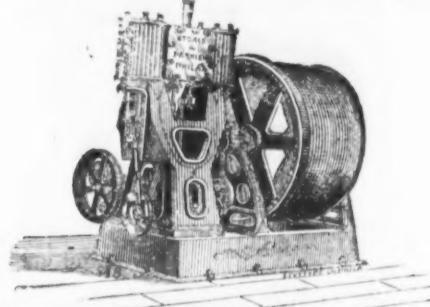
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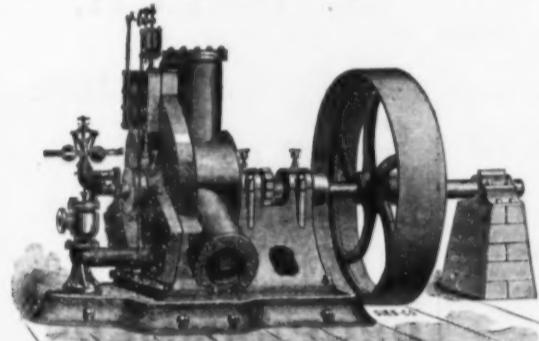
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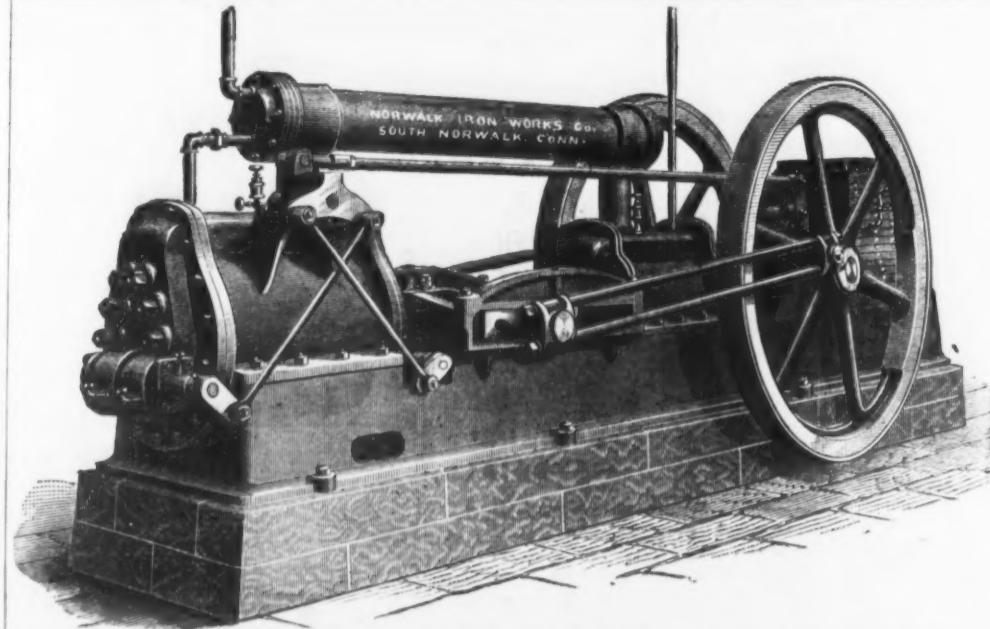
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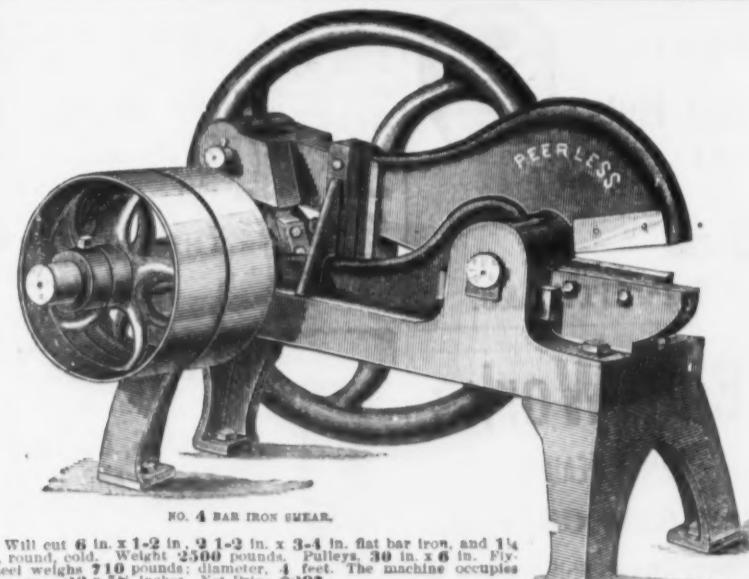
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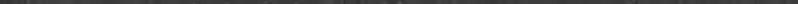
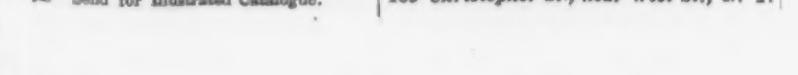
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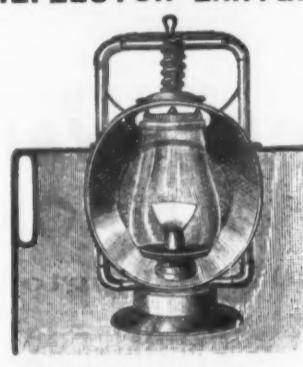
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